The Builder.

No. CLIX.

SATURDAY, FEBRUARY 21, 1846.

THE removal of Lord Lincoln from the office of Chief Commissioner of Woods and Works, together with the more than ordinary degree of excitement prevailing in the political circle, will probably have the effect of postponing for a time the revision of the Buildings Act. In the meanwhile, the public do not cease to call for this revision: the parishioners of St. Mary Abbot, Kensington, are summoned to meet in vestry on Monday morning next, to consider what steps should be taken with the view of immediately obtaining it; and other parishes, it is said, contemplate holding similar meetings for the same purpose. From letters that we have received, it would seem that our correspondent of February 7th (p. 61), "A District Surveyor," put into words the feeling of a large number of persons when he said, there is one defect "pervading the whole measure, which appears to me a primary cause of the failure, viz., an unnecessary interference with private rights beyond what is really necessary to protect the public; protection to the public being in my mind a sufficient, but the only reason upon which such an Act can be justified, and the only basis upon which its provisions should be founded." We trust that the parties to whom the revision of the Act may be committed will proceed with a full appreciation of this principle; we should then have little fear of the result.

Pending the desired alteration, the immediate appointment of an official referee in the place of Mr. Higgins, who now no longer acts, is indispensably necessary. The position which the excellent registrar is *compelled* by the Act to take, in the absence of a second referee, has proved distasteful to the building public, who desire, on applying to the referees, to submit themselves to the decision of practical men, and to have as little *law* as possible. A strong statement on the subject has been submitted to us by an able and accomplished architect; but we do not think it desirable to insert it, at all events at this moment. We have great respect for the gentleman now holding the appointment, and should feel a delicacy in referring to any subject calculated to annoy him; in the present instance, however, we are satisfied this cannot be the case, as we know that he would gladly resign his forced office of referee, and confine himself exclusively to the office he fills so well—that of *registrar*.

We take this opportunity to mention that the Buildings' Office will be removed in the present week from Trafalgar-square to No. 6, Adelphi-terrace.

The following are the heads of some recent awards:—

CUTTING INTO CHIMNEYS.

Mr. B. Davies desired to remove the chimney-breast situated in the party-wall on the ground-floor of a house in Powis-street, Woolwich, and to carry the breast in the upper floor on a York landing, supported by two iron columns.

The district-surveyor objected under schedule F.

The award was, "that inasmuch as we have reported our opinion to the Commissioners of Works and Buildings, that a modification of the rules of the Metropolitan Buildings Act to the effect stated in the said requisition, ought to be made, we are of opinion that the surveyor of the district will be justified in permitting the work to be done as stated in the said requisition, and as shewn in the drawings thereto annexed, so that the same be done in conformity with all the other rules and regulations of the Metropolitan Buildings Act, and to the satisfaction of the surveyor of the district."

RENEWAL OF WOODEN PROJECTIONS.

Mr. Hill of Lewisham, having renewed a wooden eaves-gutter in front of an employer's house, and secondly in respect of "the wood covering of shop front pentice,—about 3 feet in length at one end thereof, having been stripped and renewed with similar materials; the district surveyor, Mr. Badger, gave him notice of irregularity. The referees' award was that, "Inasmuch as the renewal of wooden eaves-cornices is contrary to the said Act, we the said official referees do hereby determine and award, that the eaves-cornice in question in so far as it is of wood, must be taken away, and if such cornice be restored, it must be formed and made of uninflammable materials, or the present eaves-cornice must be covered with some proper and sufficient incombustible material, under the superintendence of the surveyor of the district, and with regard to the repair of the wood covering of the shop-front, seeing that the same is only about 3 feet in length, and a small addition to an old covering used for the purpose of trade, and being of the nature of a cornice to a shop-front, we the said official referees do further award, that such covering may remain."

Costs of office 1*l.* 11s. 8d., and 10s. 6d. to the district surveyor, to be paid by Hill.

PARTY-WALLS.

Mr. Gosling, of Edward-street, Woolwich, "applied to be allowed to use a party-wall 8½ inches thick (which was built under the Act to a fourth-rate building, three stories high), for a third-rate building of the same height as the fourth-rate, viz., three stories, consisting of cellars, ground and one-pair floors; Mr. Gosling, finding that the wall was not thick enough, began an external wall 14 inches, or 1½ brick thick against the 9-inch party wall, but as it cut up his space, and was much more expensive than he contemplated, he was induced to make the application. The district surveyor, Mr. Aitchison, was of opinion that as his building was to be precisely of the same height as the other, and merely differed in being of rather larger area, that a 9-inch wall would be as efficient for all practical purposes as it would be between two fourth-rate buildings."

The referees said—"we are not authorized to relax the rules of the Metropolitan Buildings Act in respect of party-walls as it regards their thicknesses in such cases, and if the said William Gosling desires to build a house against the party-wall in question, he must build a fourth-rate house, or must take down and rebuild the said party-wall of the thicknesses required by the said Act for the rate of the house which he proposes to build, or must build an external wall of the thicknesses required by the said Act for the rate of the house which he proposes to build against the said existing party-wall."

MR. GALLY KNIGHT, M.P.

THE death of Mr. Henry Gally Knight, which occurred on the 9th inst., at his house in Lower Grosvenor-street, will be deplored as well by all who are interested in architectural literature, as by those who enjoyed the gratification of being acquainted with him. He was in his fifty-ninth year, and has sat in Parliament since 1834. Mr. Knight's literary taste exhibited itself in the first instance in a series of poetical tales, illustrative of the countries through which he had travelled immediately after leaving Cambridge, and where he had renewed an acquaintance with Lord Byron. These failed to obtain for him any great reputation as a poet, and after the publication of a dramatic poem called "Hannibal in Bithynia," he appears to have deserted the muses, and to have devoted his leisure to the investigation of architectural history at home and abroad.

Startled by the early dates ascribed by the Norman Society of Antiquaries to certain churches in the pointed style, he landed at Dieppe in May, 1831, examined the buildings and the *libraries* throughout the country, and on his return published "An Architectural Tour in Normandy," which conclusively destroyed the assertions of the French antiquaries. Speaking of the want of precise evidence as to the date of existing buildings, or of the particular portions of those buildings upon which the solution of antiquarian problems frequently depends, he said wisely:—"The best evidence is contained in the buildings themselves,—the evidence of construction and style. This evidence is a fact, and a fact of more weight than bushels of inferences, conjectures and opinions. Against the evidence of style, the evidence of silence (often much insisted upon) is of no avail, for unrecorded ruin is, in any instance, much more probable than the real existence of an unprecedented anomaly."

At the conclusion of the Tour are two valuable essays, one on Norman architecture in Normandy, the other on Norman architecture in England.

Having thus reviewed the works of the Normans in these two countries, he was desirous of completing the survey "by giving some account of their operations in the third scene of their conquest and dominion, Sicily;" and accordingly started for Messina in August, 1836, and in 1838, published a sequel to the Tour, under the title of "The Normans in Sicily." This is prefaced with an historical notice of the events which led to the establishment of the Normans in the south of Europe. His third, last, and best work is called "Ecclesiastical Architecture of Italy, from the time of Constantine to the fifteenth century;" splendidly illustrated by Mr. Owen Jones.

In each of the former cases he had engaged a professional architect to assist him; Mr. Richard Hussey in the first instance, and Mr. George Moore (whose present sad state was mentioned last week) in the second; and appears to have spared no trouble and expense in obtaining correct data. We have great satisfaction in recording, that nearly his last act was one of benevolent liberality. Mr. Wyatt, the architect, having attended him a very short time ago, on the subject of poor Moore, Mr. Knight immediately wrote a check for fifty pounds, and presented it as his contribution to the fund it is desired to raise.

Mr. Knight was a member of the commission for the advancement of the fine arts, and was a constant attendant at the anniversary meetings of several of the metropolitan societies connected with literature and art.

DECORATIONS, BUCKINGHAM PALACE.—The grand staircase has been decorated, under the direction of Mr. Gruner, and is now completed after the manner of the Italian masters. On the ceiling four fresco paintings, on gold ground, representing morning, evening, noon, and night, have been executed by Mr. O. Townsend. Wreaths of flowers, surrounding these frescos, are the work of Messrs. Murdock and Denby. The imitations of marble, executed by Mr. Moxon, are admirable.

NEW ORDER OF ECCLESIASTICAL ARCHITECTURE.—The spire of Grace Church is like an alligator's tail sticking up out of a thimble, if there ever was such a thing.—*New York Tribunal.*

REPEAL OF THE BRICK DUTIES.

Sir,—Having seen some observations in your paper of Saturday, the 7th, on the repeal of the brick duties, I beg to forward you a copy of a letter I addressed on the 24th ult., to Sir Robert Peel on the same subject.

I should suggest that a petition should be prepared immediately to the legislature for the repeal of the duty, and as your journal is now the acknowledged organ of the building interests and is circulated in every town in the kingdom; copies of the petition might lie at the offices of your agents in the provinces and in the metropolis, and in the course of a few days, the opinion of the building trades on a matter so important to their interest could be laid before Parliament.

In the metropolis alone, there are upwards of 45,000 persons occupied in the trades connected with houses, and the number of houses erected in 1841 amounted to 3,102.

In the provinces, the number of houses erected in the same year was 30,631, and the total number of persons connected with the building trades was upwards of 334,000.

No manufacture in the country has so large a number of persons employed upon it as are connected with the building trades.

A petition emanating from so numerous and influential a class, would no doubt command the attention of the legislature.

Should the suggestions I have taken the liberty of offering be carried into effect, I shall be happy to assist in any way in my power, and to subscribe 5*l.* to the funds for defraying the necessary expenses.

I am, Sir, &c., Marsh Nelson.

Reform Club, 10th Feb. 1846.

Sir,—As I feel assured that any suggestion with reference to taxes which press unequally, will be favourably received by you at this time, more particularly if it can be shewn that by amendment or repeal increased employment will be given to the working classes, I have ventured to address you on the subject of the brick duties, which is frequently brought under my notice.

Bricks are now selling for 40s. a thousand, and the cost to make them is not more than 25s., including a duty of 5s. 10d. a thousand, and even when the prime cost is 20s. the price is seldom below 30s. The duty is levied whilst the bricks are "green in the hacks," i.e. as soon as they are stacked in rows to dry, and it is payable in six weeks from the time it is levied. Under the most favourable circumstances the bricks cannot be dried and put into the clumps or kilns, and burnt ready for sale by the time the duty is payable.

In wet seasons, when bricks are a long time drying in the hacks, they are not ready for sale for many weeks after the duty has been paid. The maker has therefore to provide capital to pay the duty in *anticipation* of the manufactured article. This excludes the small capitalist from the manufacture, and even the large brick-makers are often obliged to make great sacrifices in wet or bad seasons, to meet the duty payments. But another injustice arises from this mode of collecting the duty. A storm or succession of wet weather will frequently destroy or seriously injure, several hacks of bricks; upon these also the duty must be paid, as no remission is allowed after they are once stacked in the hacks. A misfortune of this kind has been the ruin of several brick-makers, and in addition to the loss of the undried bricks, the exciseman seizes the remainder of the bricks in the field for the duty on those destroyed.

These reasons will I think sufficiently explain the causes that operate against the small capitalist entering into brick-making, and they will at the same time, account for the large profit they bear upon the prime cost to cover contingencies.

Bricks are manufactured articles, and the same facility should be afforded to those engaged in the trade by the legislature, as is afforded to other manufactures. Taxing a brick before it is dry or burnt, is like taxing the raw material of any other manufactured article. Bricks in the hacks when the duty is levied, are but a remove from lumps of clay.

The manufacture of bricks has an additional claim to be unshackled over most other articles. It is a manufacture that is produced almost entirely by human labour, and in a season of the year when most other out-door occupations are abandoned. In the winter time the earth is prepared, and a large number of hands are always employed upon this part of the process.

By the removal of the duty every small builder would have his brickfield, and such would be the competition, that improved modes of manufacture would be adopted, and I have no hesitation in saying, that in a short time, the price would be reduced one-half, and employment given, particularly in the agricultural districts, to a great number of labouring men. By taking off the duty at this season of the year, additional labourers would at once be set to work to prepare the earth for the summer, and no injustice would be done to the large brick-makers, as the enormous price will shew that the stocks in hand are not sufficient to meet the demand till the new bricks come into the market next season, which is generally about the middle of May.

In another point of view, the brick duties are unfair. Why should the principal building material of a house be taxed in one county and not in another? The mere accident of its geological position is the cause. A man who lives over a stratum of stone pays no duty to build his house, but a man who has the misfortune to be located in a clay soil has to pay a duty; and hence it is, that in districts where good building stone prevails, the houses of the lower order are always larger and more commodious than in the brick districts. Every facility therefore should be given to cheapen the manufacture of bricks, to render their cost on a par with stone. But the duties press more heavily on the poor man than on the rich man. Bricks form a much larger proportion of the total cost of a cottage than they do of a mansion, and this is evident, from the absence of the ornamental plastering and other expensive finishings upon which no duty is levied.

The advantages to be derived from the repeal of this duty would not be confined to the brick-makers, and the employment at this time of the year of a large number of labourers; it would give a spirt to the whole building trade, and employment to carpenters, joiners, plasterers, and to workmen in every department of building. The last census shews that the population was more crowded per house, in the metropolis than at the preceding one, with a much smaller proportion of uninhabited houses and a decrease in the number building.

In 1831	there were	7·5	inmates to a house
„ 1841	„	7·6	„
„ 1831	„	8	uninhabited to 100 inhabited
„ 1841	„	4·7	„
„ 1831	„	21	houses building to 100 inhabited houses
„ 1841	„	15	„

Which indicates a demand for houses without a sufficient supply; and this demand is still continuing. The repeal of the brick duty would be a great boon to the agriculturist and the agricultural labourer, as it presses harder in the rural districts than in towns.

In the country, the demand being limited, the kilns are many miles distant, and then only the smallest possible number is made; as the maker, having to pay his duty beforehand, would be a serious loser if his stock was to remain long unsold. It is frequently the case in villages, that repairs to farm buildings and cottages are neglected from the dearness and scarcity of bricks.

I beg to apologize for troubling you with this lengthy statement; and were I not afraid of trespassing on your time, I should have extended my remarks to the advantage that architecture, and house building in particular, would derive from the manufacture of improved forms of bricks and of ornamental bricks. At present, a maximum size is fixed under a heavy penalty. The advantage could also be shewn, that the coal owners and ship owners would derive, from the increased consumption of breeze or small coal, an item of considerable importance in the manufacture of bricks. It could also be shewn what the effect has been of the repeal of duties of a similar kind, that on stained paper, for instance, in giving employment to capital of smaller amounts, in multiplying the number of workmen, and at the same time improving the manufactured article.

In conclusion, I beg to refer you, in support of my views, to Mr. McCullock's opinion on the same subject. Speaking of the brick duty, he says, "Sound policy would suggest its repeal, for no duty being laid on stone, the use of bricks is unfairly limited, and an injury done to those engaged in their manufacture."

I have the honour to be, Sir, your obedient servant, Marsh Nelson.

To the Right Hon. Sir Robert Peel, Bart., M.P.

THE FLORENTINE SCHOOL OF ARCHITECTURE.

SIENNA, AREZZO, AND PISTOJA.*

To that school of Italian architecture, which may properly be designated the *Florentine*, we have previously attributed a high degree of merit.† The grand and severe style of its elevations is precisely what an English architect, accustomed to the regular architecture of the Palladian school, might look at with some degree of surprise; but in the hands of one, sufficiently versed in the principles of design, a new style might be gained from these, having the advantages of each, yet with more of novelty, than just now our architecture is accustomed to exhibit. To what has been achieved in the Palladian style, we are able to point for a reply to many, who make an unfavourable contrast between the modern architecture of England, and that of other countries. But a style, which more than any other is governed by strict rules—the more indispensable from the constant use of the orders—requires also, more than any other, to fertilize and invigorate it, the frequent addition of foreign matter. By an architect, sufficiently alive to the real value of rules, much might be effected, without shewing any disunion of parts, and which might have an appearance of novelty, though only a new arrangement of previous ideas, the only form in which originality can be considered to exist. We do not forget, that something has already been attempted, by adopting that noble feature of the Florentine architecture, its cornice; but there are other materials. The general massive character is admirably adapted to a certain class of buildings; and the details of windows and rustics but require to be attentively studied by modern architects, to make of them, what the Roman architects made, a different style and school, whilst our habits and wants, added to our present position in the Palladian school, ought to produce something essentially new and characteristic. *Copy* the Florentine style, and we know of few so unsuitable to the expression of modern wants; *learn from it*, and *adapt*, and there is none from which more information can be acquired. Cornices, heretofore proportioned to an upper order, or proportioned ill, we should regulate as at Florence, by the height of the building, and with sufficient projection. In Gwilt's "Encyclopædia," page 747, the following table is given:—

In the Spannocchi palace, at Siena, the cornice is $\frac{81}{1000}$ of the whole height of building, or $\frac{3}{37}$=·081.

In the Piccolomini palace, at Siena, the cornice is $\frac{70}{1000}$ of the whole height of building, or $\frac{3}{41}$=·074.

In the Pojana palace, built by Palladio, at Pojana, in the Vicentine territory, the cornice is $\frac{71}{1000}$ of the whole height of building, or $\frac{1}{14}$=·071.

In the Strozzi palace, at Florence, the cornice is $\frac{69}{1000}$ of the whole height of building, or $\frac{3}{43}$=·069.

In the Pandolfini palace, at Florence, by Raffaelle, the cornice is $\frac{69}{1000}$ of the whole height of building, or $\frac{3}{43}$=·069.

In the Villa Montecchio, by Palladio, the cornice is $\frac{69}{1000}$ of the whole height of building, or $\frac{3}{43}$=·069.

In the Villa Caldogno, by Palladio, the cornice is $\frac{69}{1000}$ of the whole height of building, or $\frac{3}{43}$=·069.

In another villa by Palladio, for the family of Caldogno, the cornice is $\frac{68}{1000}$ of the whole height of building, or $\frac{1}{15}$=·066.

In the Farnese palace, at Rome, the cornice is $\frac{58}{1000}$ of the whole height of building, or $\frac{1}{17}$=·059.

In the Gondi palace, at Florence, the cornice is $\frac{57}{1000}$ of the whole height of building, or $\frac{2}{35}$=·057.

The conclusion to which Mr. Gwilt arrives is that the mean height for a cornice may be considered as $\frac{1}{15}$. By varying the rustics

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* Vide "Architecture Toscane, ou Palais, Maisons, et autres édifices de la Toscane, mesurés et déssinés, par A. Grandjean de Montigny et A. Famin, Architectes. Paris, 1837."

† Continued from vol. iii., page 618.

and plain surface, we might gain much of the solidity and massiveness of the Florentine palaces, without the "heavy monotony" which by some is considered, and perhaps is, a peculiarity in them. They were characteristic of the inhabitants; our dwellings should not be less so: we need no half castellated pile, where civil contest is no daily occurrence; we have no use for lofty towers, the sign of aristocracy, and the means of abusing power, but we require the most precise attention to modern comfort, and desire that character to be expressed in the exterior.

In our previous notice of M. M. Grandjean de Montigny and A. Famin's work on the Florentine style, we deferred that part, which illustrates the examples in some parts of Tuscany. Of such examples Sienna possesses several remarkable ones, having a character somewhat differing from those of Florence. We remark in them the same political or social influences, and the same general ingredients of design, but varied by the peculiarities of the ground, on which they stand.—Now forming part of the duchy of Tuscany, Sienna was formerly an independent state. Agitated by similar commotions, and often actuated by conflicting interests, Florence and Sienna were frequently at war. The city stands on the summit of a mountain in the midst of hills. From its situation, there was less need of large internal courts, an arrangement so desirable in a more confined atmosphere, whilst the beauty of the prospect led to the arranging terraced courts, looking on to the gardens down the side of the mountain. Whilst the courts are smaller, their porticoes are more rare than in the palaces of Florence, but the vestibule of entrance becomes of more importance.—The town-house of Sienna is the oldest building of the city here illustrated. The style is that of the thirteenth century. It is a curious mixture of windows with pointed arches, arranged with some attention to regularity, with the machicolated parapet of a castle. Beside it stands a lofty tower perforated in every part for defensive operations. The interior of the former building underwent some alterations in the 14th century, and amongst the architects' names we find those of Agostino, and Agnolo, of Sienna. Notwithstanding its peculiar character, it has rather an imposing appearance, and is commanded by thirteen different streets. A chapel near the entrance to the city is interesting, as being one of the works of Francesco di Giorgio, an architect and sculptor, who is said by his writings and his example to have first subverted the style, practised by Giovanni da Pisa, and others. It shews that the architect had paid some attention to antique monuments, being very similar to the ancient temples and tombs on the Appian way, and the frieze is an imitation of that to the temple of Antoninus and Faustina. The crescents of the Piccolomini family are inserted in the modillion band.—The same architect built a small house of brick in the Corso, about the year 1460, which has some merit, and is remarkable for its perfect state of preservation. There are ornamented string courses, a large cornice, pilasters at the angles, the lower story being rusticated, with the courses alternately broad and narrow. The whole of the ornamental work is in terra cotta. The sacristy of the cathedral was constructed about the year 1450 by Pius II. It was intended for a library. The decorations are very elaborate, and it contains some paintings by Pinturicchio, from the cartoons of Raphael. It is, of course, in a very different style to that of the cathedral. "The loggia of the pope" was built by the same pontiff, in the year 1460. Francesco di Giorgio was the architect. It is quadrangular in the plan, presenting three arches, springing from Corinthian columns, with an inscription and cornice above, in the main front, one arch at each end, and a wall at the back. The architect executed the capitals and enrichments. These loggie were common in Tuscany. They were built by the nobility in the neighbourhood of their palaces, in order to assemble their friends and dependents to discuss the affairs of the republic, and frequently matters of science and art.

The Spannocchi palace was completed in 1472, the architect being Francesco di Giorgio. It greatly resembles the palaces of Florence, being rusticated the whole height, and having a bold cornice. It is in three stories, and the proportions are happily arranged. The ground story presents five arches of entrance, the arrangement of the arch stones being irrespective of the horizontal courses, and with the extrados pointed, both strong characteristics of the style;—above are two heights of windows and string courses. The windows have all the central column. The cornice is very peculiar, having between its cantilevers, busts projecting boldly from circular pannels. There are iron rings fastened in the wall, at the ground story, as in the palaces at Florence.—The Piccolomini palace in general design is very similar to the one just mentioned. It is, however, of nearly double the length, and a better character is given to the basement by the treatment of the rustics, the steps, and the base, and impost mouldings. The arch of entrance is larger than the four on each side. The crescent is seen in the enrichments of the cornice. The internal court has been elaborately decorated. The design is attributed to Francesco di Giorgio, and the date is supposed to be the commencement of the sixteenth century. The names of some other architects are mentioned as having been engaged at Sienna; amongst others, it is said that Baldassare Peruzzi was the architect of a second house of brick in the Corso, which has some details carefully executed in terra-cotta.

At Arezzo, besides the Gothic cathedral, there are several churches, and the hospital. The church "della Pieve" was restored by Giorgio Vasari, and in consequence of the care which the monks had taken of his education, and because his ancestors were buried there, he executed the work at his own expense.—The façade of the church of the Madona delle Grazie, near Arezzo, was by Benedetto da Maiano. It consists of a portico of eight columns with arches, supporting an entablature, and a boldly projecting roof. The frieze and the spandrils of the arches are elaborately decorated. This portico occupies about the same space as the body of the church, to which it is at right angles. There is much of the school of Brunelleschi in the design.—At Pistoja, there is a fine church, which was commenced in 1509. Ventura Andrea Vitoni, the architect, was at first a joiner, and was employed in that capacity upon some of the works of Bramante, at Rome. On his return to his native country, he was commissioned to build this church. Dying before its completion, another architect could not be found sufficiently skilful for the work, and it remained a long time unfinished, until at length it was completed in 1561 by Vasari, though not exactly in the original idea. It is highly praised by the authors of the volume, as one of the best productions of the sixteenth century. The plan is octagonal with a vestibule in front, and a recess at the opposite end. In the domes and vaulting, there is some display of skill.

The work concludes with plans of the square at Leghorn, and with plans and views of the Campo Santo at Pisa. It also contains frontispieces to the different parts, illustrating the sculpture and antiquities preserved in the museums of Tuscany, some useful description, and a table of architects' names. E. H.

CARPENTERS' HALL, LONDON WALL.

At the time when the paintings were first discovered in this hall, we visited it with the intention of placing before our readers such particulars of the structure and of the company to which it belongs, as might be obtainable. Finding, however, that Mr. Fairholt and other members of the Archæological Association had already commenced an investigation, we, of course, left it in their hands. Mr. Fairholt's excellent paper, the result of that inquiry, illustrated by four engravings of the paintings, is since published in the journal of the association, and we avail ourselves of it for most of the following information.

"All that remains to us illustrative of the ancient state of the civic companies of London, is so very slight, that any addition to our knowledge on that subject is welcome and curious. The great fire in the first instance, and the hand of spoliation and mis-called improvement in the next, have nearly eradicated all vestiges of their past glories. The discovery, therefore, within the last few weeks, of so much of the internal fittings and decorations of an ancient civic hall, as may lead us to a correct comprehension of its original condition, is an event of singular interest to all who are curious in London antiquities.

On Friday, December 26th, 1845, one of the workmen employed in refitting the interior of Carpenters' Hall, London Wall, finding an insecure hold for a nail he was driving in the upper part of the western wall, tore away the very old and decayed canvas which had covered it, in order that he might ascertain the cause: by doing so, he uncovered a portion of an ancient painting, which induced him to strip the entire surface, and thus led to the exposure of the series of pictures which formed the principal decoration of this ancient hall three centuries since. These pictures are all scriptural, and have reference to the art and mystery of the carpenters; but others have since been found on the south wall, which are entirely ornamental.

Carpenters' Hall is one of the few ancient buildings that escaped the great fire, which came very near, but did not destroy it. Its position at that time was on the very verge of London, and the fire was checked when it may be said to have surrounded it; it was frequently in imminent danger, and Drapers' Hall, in its immediate vicinity, was destroyed."

The court Book of the company shews that a similar fate was feared for Carpenters' Hall. Being fortunately saved, it was let to the drapers, goldsmiths, feltmakers, weavers, and haberdashers companies to hold their courts in; and afterwards, 12th October, 1666, to the lord mayor of London elect, "to keep his maioralty in;" his lordship undertaking to arrange with the companies just mentioned.

The situation of the hall was originally very pleasant. The old walls of London faced it, beyond which were Moorfields and Finsbury,—the great places for recreative walks; while all beyond was open ground, stretching right and left to the nearest villages. Moorfields, in the ancient maps, is covered with linen; and in Thomas Deloney's 'Crown Garland of Golden Roses,' may be seen the ballad history of 'the two ladies of Finsbury that gave Moorfields to the city, for the maidens of London to dry clothes in,' and where he says:

'Now are made most pleasant walks
That great contentment yield:'

while Finsbury fields was the great school of archery, from the time when every man was enjoined by law to 'draw a good bow and shoot a good shot,' until the entire decay of the science. Until comparatively modern times, Moorfields was an open space, uniting with the Artillery ground and Bunhill fields. Eastward of the hall was the mansion of Sir Henry Pawlet, built in the reigns of Henry VIII. and Edward VI., with its large gardens, and at its back were others, reaching to Lothbury. The company still preserve much open ground about their hall, with the old garden behind, which has never been built on.

The account of the hall and company, given in our histories of London, are extremely meagre and unsatisfactory, however voluminous the works may be. Stow merely names it, and Strype, in 1720, dismisses it in these few complimentary words:—'Carpenters' Hall, which hath a very handsome comeing into it of free stone, which leadeth to a court yard and garden, which is begirt with the hall and apartments thereunto belonging, being a pretty handsome building.'

Edward Hatton, in his 'New View of London,' 1708, merely speaks of it 'as ornamentally built of timber.' Seymour, in his 'Survey of London,' 1735 (vol ii., p. 378), has devoted most space to the subject: he says:—'The company of carpenters, being a society of antient standing, were incorporated by letters patent, bearing date the 7th day of July, in the seventeenth year of the reign of King Edward I-V., by the name of Master, Wardens, and Commonalty of the Mystery of Freemen of the Carpentry of the City of London. Their arms are—*Argent*, a chevron engrailed between three pair of compasses, pointing toward the base, and a little extended, *sable*. This company are a master, three wardens, assistants uncertain, 99 on the livery, besides yeomanry. The livery fine is 8*l*. The Carpenters' Hall is situated on the south side of London Wall, almost against the east end of Bethlehem.

In this hall, in memory of two eminent members of this company, hang up two pic-

tures representing them. The one is an aged person, in a ruff, well drawn, with one hand putting a compass upon a rule, held in the other, and underwrit, 'WILLIAM PORTINGTON, ESQ., master carpenter in the office of his majesty's buildings, who served that place 40 years, and departed this life the 28th of March, 1628, aged 84 years; who was a well-wisher of this society. This being the geft of Matthew Banks, who served fourteen years, and is at this present master of the said company, August 19th, 1637.'

The other picture is more modern, and underwritten: 'This picture of John Scot, esq., carpenter and carriage-maker to the office of ordnance, in the reign of King Charles II., was placed here by his apprentice, Matthew Banks, esq., master carpenter to his Majesty, and master of this company this present year, 1698.'

'A table also hangs up for Richard Wiat, of London, esq., thrice master of this Company of Carpenters, Ann. Dom. 1604, 1605, 1616, and a good benefacter thereunto. Among other gifts he gave 500*l.* to build an almshouse near Godalmin in Surrey, for ten poor men, and 70*l.* a year to maintain them. And his wife added something for the company to go down to visit it.' In vol. i. p. 373, speaking of the parish of Allhallows, London Wall, he says, "In this parish is Carpenters' Hall, an old building of timber, with nothing very remarkable in it.' The company still preserve the two portraits in their meeting room, the old hall having been let by them for other purposes."

The company possess also (and still use on one day in the year), four very curious caps or crowns. The oldest and at the same time handsomest, is dated 1561. They have also some good silver cups, one of them particularly elegant. This has no date; two others are dated 1612 and 1628.

"Malcolm, in his *Londinium Redivivum*, 1803 (vol. ii. p. 79), speaks of a manuscript account of the foundation of this company, its statutes, benefactions, and list of masters and wardens, in the Cottonian Library, Vitellius F. XVI., which was so damaged in the fire which injured that library as to be illegible; and although the company possess some very old records, Mr. Jupp informs me he has not been enabled to find 'any entry which will give any information as to the date of the building, there being no records between the years 1515 and 1533, and no money accounts until 1554.' It is very probable that the old hall was constructed about the period when this lapse in the books occurs, as the portions of it incorporated in the more modern buildings are evidently as old, if not older, than that date."

The length of the apartment is about 58 feet, the width about 26 feet.

"The exterior of the hall possesses no traces of antiquity; the date upon the water spouts is 1722; 'the front consists of a neat Doric basement with arches, windows, and porticos at the east and west ends. On the basement is a rustic story, ornamented with cornices, pediments, &c., and the armorial bearings of the city and company.' (*Hughson's Lond.* 1806, vol. iii. p. 28). Malcolm speaks of the 'ancient hall,' and alluding to its internal aspect says, 'the roof of this hall has been originally of oak, something like that of Westminster Hall, but that is either demolished or concealed by the present stuccoed ceiling.' This ceiling was constructed in 1671, and the ornamental pilasters which support it, spring from the corbels of the old arched timber roof. The exposure of the upper half of the western end, by the recent removal of its canvas covering, has laid bare the massive oak beams that originally supported it; the paintings which are about to be described, occupying the entire length of the hall, their base being level with the corbels at about the height of 9 feet from the ground. They are surmounted by an embattled oak beam, and measure 3 feet in height and 23 in length; being broken and destroyed at some distance from the north side.

The paintings—which all bear some reference to carpentry—are divided into four compartments by ornamental columns, painted in distemper. The laths, which form the groundwork, are placed at right angles with each other, and some few inches apart; upon this is a thick layer of brown earth and clay, strengthened or held together with straw, and it is not unworthy of notice that the ancient fresco painters used finely chopped straw to form the *intonaco* of their under surfaces. Upon this body of clay, which is of considerable thickness, is spread a layer of lime, about one-sixth of an inch in depth, and upon this the paintings are executed. The first represents the construction of the ark; Noah is represented kneeling on one knee, with his hat in his left hand, and his adz before him, receiving the order for its construction from the Almighty, who is in the clouds above. A tree separates this from the other portion of the picture, where his three sons are busily employed in its formation: one drives a nail into the prow of the vessel, another is engaged behind; the third, in the foreground, rests his hands upon a saw. Of the inscription above, which is much decayed, a portion only of the second line is legible, with the words

> earthe is full of iqbr and I shall destroy them—

which is addressed to Noah by the Almighty. The subject of the next compartment is obtained from 2 Kings, chap 22, and represents King Josiah ordering the repair of the Temple. The king is seated on his throne, attended by two noblemen, and is giving directions to an officer, who stands before him with a staff in one hand and a purse in the other. Behind him is a grave elderly man in a tall cap, who may be intended for the high priest, who is delivering to the workmen the money for the necessary repairs. The choice of this subject may have been originally decided from the complimentary manner in which '*the carpenters* and builders' are mentioned in the sacred narrative; for we are told 'there was no reckoning made with them of the money that was delivered into their hands, because they dealt faithfully;' a circumstance not forgot to be recorded in the inscription above, which runs thus:—

> Kinge Josyas commaundyd pe hye prest yt pe money wch was
> hous of pe lorde should be delyvered to pe carpenters wt
> out any . . .

The next subject, which is perhaps the most curious of the series, represents an incident in the early life of the Saviour. Joseph is represented at his work as a carpenter, while the Saviour is engaged in gathering the chips and placing them in a large basket beside him. Mary is seated on one side busily engaged in spinning with the distaff, and the scene takes place in the court-yard of a house which is built with red brick, the central portion of lath and clay, having a plain thatch; the yard is enclosed with wooden palings, and is entered by a porch of the same humble materials. A single tree grows in the area, its roots supported by a circular framework of timber. Several logs lie about, upon one of which Joseph is busily employed,—apparently in obedience to the orders of a grave figure in a furred gown, ruff, and cap of the sixteenth century. The inscription above is the only perfect one of the series.

> Christ, at pe age of xii. yeres, spitpnge amonge the teachers in the trmple, his father and his mother were come to seke him, he went wpth them to Nazarethe and was obedyent unto them. Lucke ii. chapter.

This incident was a favourite subject with the ancient artists: Albert Durer has devoted one of the large woodcuts of his series illustrative of the life of the Virgin, to it. This was executed in 1511, and the figure of Joseph is very similar to that in the present picture."

The fourth and last compartment represents the Saviour in his youth teaching in the synagogue. It is the best composition of the series, but has been entirely destroyed on one side; the inscription is still more fragmentary:—

> Christ teachynge in pe synag . . . . . .
> wpstem is thys, is not thys that carpentyrs . . .

Enough is here left to assure us of the reason which dictated the choice of this subject,—the question 'is not this that *carpenter's* son?'

These paintings are executed in a remarkably free and masterly manner, and the drawing of the figures is always good: I may particularly allude to the officer who stands before the king's throne, and the foremost of the doctors in the last painting, who carries the book; both are exceedingly good, and could not be surpassed by any work of the same age. The thickset limbs, and strongly marked features, as well as the general *pose* of the figures, remind us forcibly of Holbein, and certainly refer to that school and period, as the school in which the artist of these works had studied, and the era in which they were executed. They are painted in a vigorous black outline, the tints of the dresses are flat, with little attempt at shadows, and there are occasionally traces of gilding observable. Thus the figure of the Almighty in the first compartment has been entirely gilt, as have the various portions of jewelry worn by the principal figures; the buttons of the dresses, the cuffs of Joseph's sleeves, &c. The costume is interesting, as it may lead us to fix the date of the painting with some degree of certainty. It is not a *pure* costume belonging to any particular period, but is a mixture of antiquated dress, and the ordinary dress of the artist's own day. The attendants on King Josiah, and the officers in front of his throne, are in the costume of the latter part of the reign of Henry VIII.; but many of the other figures, of the men in the synagogue for instance, are in a strangely heterogeneous sort of dress, but which was much used by scriptural designers at the same period, and is, therefore, valuable, as it also fixes the same date.

Above this series of pictures, in the spandril of the arch, is painted the arms of the company, supported by nude figures of boys, the ground being filled with an enriched scroll, beneath which was painted an inscription in two lines, of which the only two words remaining—'SHREVES' and 'ROBARD'—would shew that it commemorated the doings of some sheriffs who were especial benefactors to the company. On the southern wall the compartments between the corbels which supported the original timber roof are filled with what is generally termed 'Elizabethan scroll-work,' composed of monsters, cupids, cornucopiæ, and ornamental panels and foliations; these are in a very decayed and imperfect condition. The fleur-de-lys forms the central ornament of that nearest the great eastern window. The mullions of this window are of carved oak, of massive proportion, with central pillars, whose bases are in the style of the *renaissance*; and these divide it into nine lights: the glass is not very old, and consists of the arms of the company, the city, and the kingdom, and the names of the masters and wardens; the earliest bearing date 1627, and the greatest number being from 1660 to 1684; the latest containing the record, 'this hall was repaired anno Dom. 1718.' The side lights of the window are perfect, and shew the arch of the original roof corresponding to that above the paintings at the west end; but the centre is considerably flattened by the more modern ceiling, which descends much lower; and above which, rooms are constructed. This ceiling was put up in 1771, as the inscription upon it informs us; and is a bold and striking work in its general effect; it is divided into four compartments, containing the arms of the kingdom, the city, and the company, together with the names of the master and wardens in whose time it was erected. Three ancient wooden panels were placed over the door: one containing the arms of the company, and the date 1579; another the names of the wardens for the time being; and the third the name 'Thomas Harper, master, 1579,' with the rebus of his name, *a harp*, and his mark as a merchant. The only other wood carving in the hall is the original corbels, ten in number; the four at each angle are plain; the two next the window on each side, are of the ordinary design, an angel bearing a shield; the remaining two on the southern wall, have respectively the head of a lion and a man. The most interesting of the series are the two on the northern wall, beneath the modern windows. The one nearest the east wall represents a female with dishevelled hair, her left arm over the neck of a lion, whose mouth reposes on her breast. The next one is a male head, dressed in the Italian cap, with its *becca* or streamer, which was so very fashionable in the fifteenth century, and which is still the hood of the knights of the garter, used in their investiture, as well as in the investiture of a civic order of not equal importance—the barber surgeons—who always place such a hood upon the shoulders of their newly-elected members; the pendant scarf being placed across the breast, with the same formalities. Neither of these corbels are perfect in their lower portions, but they are exceedingly good in point of workmanship; the

countenance of the man in the cap is particularly vigorous and characteristic.

Malcolm tells us that the original floor of the hall was 'of marble, but covered with wood at present, for the double purpose of warmth and to preserve it from injury.' We have thus a pretty perfect picture of the hall in all its phases: originally with an open timber roof springing from elegantly sculptured corbels; a noble east window, filled with old glass, its western end rich with paintings, 'the best to be had,' combining vigorous drawing with brilliant execution; and a series of elegant arabesques upon the side walls. Tapestry over carved panels of wood reached to the corbels on gala days, when the hall would be strewn with rushes, and resound to the minstrelsy, which the many entries in their books shew they frequently indulged in. In time the olden splendour is dim, the fashions alter, or the roof decays, or may be in some degree injured by the great fire; and five years after, it is replaced by one 'in the newest taste;' but throughout all its vicissitudes, enough has been spared to give us at this time a clear idea of its original form and decoration."

The company originally possessed considerable power over "the trade;" and their charters would probably afford much interesting matter on this head. We have not yet obtained access to them, but hope to do so before long.

PORTLAND STONE,

Sir,—The removal of the duty off Caen stone has caused that material to be very generally used in London, &c., these last two or three years. I beg leave to offer a few remarks on Portland stone, knowing that, unfortunately, there is an impression among many architects and gentlemen that it will not resist the action of the weather, and, consequently, is not calculated for a public building. The principal cause of this impression is, I have no doubt, the stone used at the entrance to the park at Hyde-park-corner and the Church at Brighton, built about twenty years ago. I shall, by stating facts, endeavour to shew that the stone used at both these buildings is not a fair specimen of the durability of Portland stone; for, unfortunately, they were built with the worst stone the island produces for exterior work. In the case of Brighton Church, the contractor not requiring any large blocks, went to the island of Portland and bought up, at a reduced price, the blocks that were scattered about the quarries—the refuse of other tradesmen for thirty years before. Consequently, stone of an inferior quality, unsound blocks, and stone quite unfit for external work, were indiscriminately mixed and used in the building. Thus Brighton Church is not a fair specimen of Portland stone, but rather of the bad judgment of the builder in selecting stone not fit for external work.

In reference to the building at Hyde-park-corner, it will be necessary to explain the manner of quarrying the stone, to shew what stone was used at these buildings. The principal part of the stone quarried at Portland, and generally used, is called the white bed; about ten feet below this there is another layer or bed of stone, about six feet high. This is not generally, but is occasionally, quarried: it is termed the best bed, and is of a very fine quality, and well calculated for all sorts of in-door work, such as stair-cases, paving, &c., but not at all fit for exterior work, as it will in no case resist the action of the weather. Decomposition commences as soon as it is fixed in the building, and exposed to the weather. At the commencement of the building above-named there was a scarcity of Portland stone, and the builder unfortunately selected a quantity of the best bed, rather than wait for a supply of the white bed; in consequence of which, the chaste and beautiful sculpture and ornaments are in a state of premature decay: if they had been executed in Portland stone, properly selected, they would have been as perfect now as when left from the hands of the carver, as is the case at the same building, where the Corinthian capitals, executed in the white bed, are as perfect as ever.

Thus, the improperly selected stone for Brighton Church and Hyde-park-corner has partially (by a false impression), destroyed the character of Portland stone which has been in general use for more than two centuries, and was extensively patronized by Sir Christopher Wren, as most of his public buildings prove. Having shewn the cause of certain buildings being in a state of decay, I shall now endeavour to prove, that Portland stone (if properly selected), will resist the action of the weather, and that it is the best material for public buildings of any brought to London (and I have the authority of one of the most talented architects of the day, a gentleman at the head of his profession, in confirmation of the assertion); to prove this, I shall refer to St. Paul's Cathedral, where the ornaments, which being much relieved, would, of course, first decay, are as perfect as ever; for instance, those beautiful swags of flowers around the building, which if the stone would not stand the weather, would have dropt from the face of the stone years ago, but are now quite perfect, as is the building generally. As respects the decay of the face of the stone, I shall also refer to the new church, Strand, the two towers at the west end of Westminster Abbey, Greenwich Hospital, and all buildings of Portland stone built a century and more ago, which are all nearly as perfect as ever. It may be affirmed, that the stone is not as good now as it was a hundred years since, but having had extensive practice in the quarries, I can confidently affirm, that the stone is as good now as it ever was; I will example the following buildings erected within the last thirty years:—The Custom-house, London General Post Office, Goldsmiths'-hall, Reform Club-house, and Royal Exchange: neither of these buildings shew any signs of decay, and if stone will not stand the weather, decomposition begins as soon as it is fixed in the building.

Thus, if Portland stone is properly selected (for which for the Reform Club-house, Royal Exchange and British Museum, a competent person was sent to the island), there is no doubt of its durability; and it has, moreover, an advantage over other stone, inasmuch as the waste or outside slabs, are more suited for general purposes, than any other stone brought to London. I am, Sir, yours, &c.

A Mason of Twenty Years' Practice on Portland Stone.

TO THE LONDON GAS COMPANIES.

Gentlemen,—When we look at the difficulties the system of gas lighting has had to encounter, the opposition it has met with from ignorance, prejudice, and interest, and now see the successful and flourishing state of its practical application, it leads us to think highly of the moral energies of the nation. In the present day we are enjoying the gratification of having introduced this branch of science to a practical utility, calculated to be of the greatest benefit to mankind, and in after ages we may confidently expect to have it recorded, that it was England and Englishmen that conferred this benefit on posterity.

Notwithstanding, however, that this branch of science has arrived at a wonderful degree of perfection, it is not difficult to perceive that much yet remains to be done, both as to a more general diffusion of the advantages of its introduction, and improvements in its more general applicability, and its production. It is to these points that I now beg to call your attention, and I would suggest the necessity of greater care being paid to the quality of the gas manufactured, and that you should cease to devote attention to the coke; rely solely on the gas, by which you would find your profits very considerably increased, in addition to rendering the gas available for the lighting of private houses, which at present it is unfitted for, through the comparative smallness of its illuminating power. I would suggest the use of Cannel coal, or at least a mixture of it with the Newcastle, and not allowing the coal to remain so long in the retorts as is now usual, as by the excessive baking it has been proved its illuminating power is destroyed, and you do not reap advantage, from the increased quantity of gas carbonized. By your present system you hold out inducements for the introduction of new companies, who, if once started on the principle of supplying richly illuminating gas, you would find formidable opponents, and when too late you will have to alter your system and follow in their wake. But you could never successfully compete with them, as a company so constituted would require smaller sized works for the carbonizing, lesser sized mains for the distribution of the gas, and a considerably less establishment, not being burdened with the make or sale of coke; and in consequence the capital required would be less, whilst the profits would be greater. It behoves you to take this into consideration without further delay, as once let the consumers of gas see that it is to their interest to be supplied with a richly illuminating gas, and they will not be long in taking steps to be so supplied, and this is being every day brought nearer by the introduction of meters. It has been proved that only half the quantity of Cannel coal gas is required to give a requisite light, in comparison with Newcastle coal—for instance, the gas consumed through a thirty-hole argand burner, it required, to give light equal to twenty-five mould candles, seven cubic feet and five-tenths *of gas made from Newcastle coal*, and *only three feet of gas from Cannel coal*. This has been proved by Messrs. Clegg, Hedley, Lowe, and many other engineers of the present day. The necessity of the improvement in London gas is acknowledged by your own engineers, as shewn by their various patents, the one of which was for passing gas over naphtha; this certainly is very beneficial, and adds greatly to the illuminating power, but I cannot see why the naphtha or carbon should be first taken from the gas by excessive baking, and then a patent process adopted for giving it back again. It puts me in mind of a company that was formed for the purpose of supplying bread from which the spirit had been extracted; before they could effect sales they were obliged to give a glass of spirits with each loaf. Where was the gain? just so in your case, you take the spirit from the gas, and in consequence have to give twice the quantity to your public lights and scale consumers, and for which extra quantity you do not get paid. In concluding this letter I will sum up with what I think would be to your interest to do—pay more attention to the manufacture of gas, and less to that of coke; lessen your expenses, see to the competency of your officers, to the proper distribution of the main pipes, and the fittings for houses, shops, &c. Sincerely trusting that these suggestions will not be lost,

I have the honour to be, &c.,

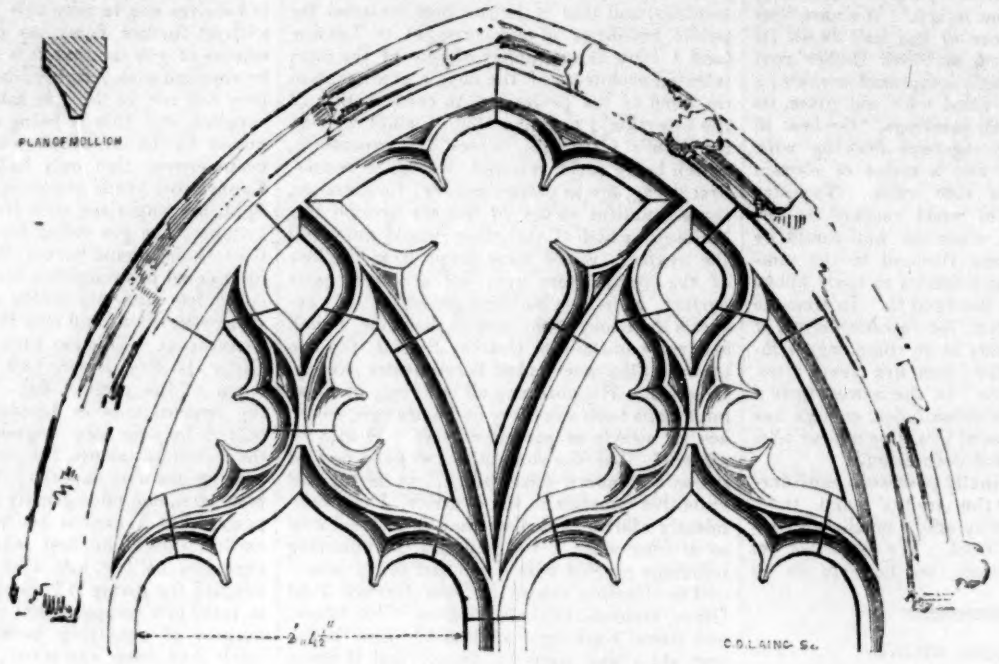
Feb. 9th, 1846. "Carbon."

ART-UNION CARTOONS.

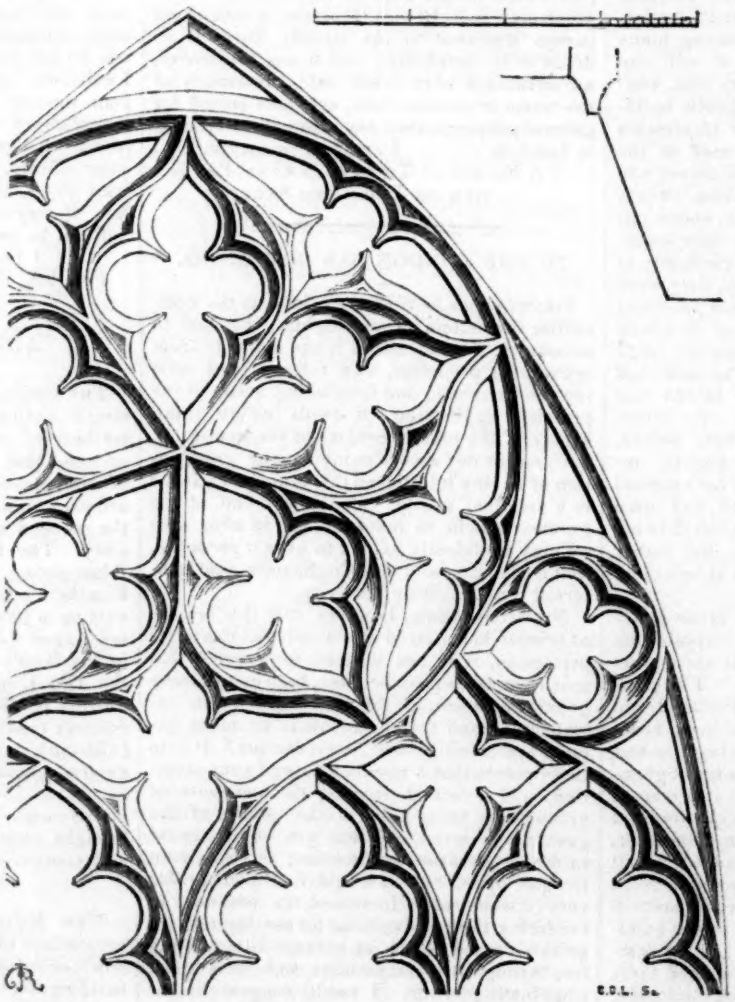
The committee have determined on engraving in outline, and distributing to all the subscribers of some ensuing year, nine of the cartoons that were submitted in competition, of course with the assent of the respective artists, who will themselves be invited to make the reduced drawing at the expense of the society. The following is the list:—2. Saxon Alms-giving. 4. Life of Alfred. 8. Queen Elizabeth's visit to Kenilworth. 12. Howard visiting a prison (*Armitage*). 13. Non Angli sed Angeli (*Scharf*). 22. Alfred surrounded by his family (*Salter*). 23. The welcome of the Boy-King, Henry VI. (*Corbould*). 25. Seizure of Roger Mortimer (*Paton*); and 27. Spenser reading the Faërie Queene to Raleigh (*Claxton*). We are disposed to think this determination will give universal satisfaction, as well to the subscribers generally as to the artists named, whose works will thus be brought under the notice of "all England," and somewhere besides.

New Buildings at Hamburgh.—A correspondent of *The Times* says a number of the newly-erected, many of them still unfinished, buildings on the Monkedamm have given way; and, though for the moment secured, as far as may be, by strong wooden props, must, it is feared, be taken down in whole or in part; and God only knows how many houses as yet free from outward flaw may be in a similar precarious predicament. The examination ordered by the senate is whispered to have produced some very disagreeable discoveries; shall the lives of the liege, whether inhabitants or passers-by, be left to the tender mercies of architect contractors or building speculators, who, can they but close the rents, and whiten over the defects until they deliver over their work, or sell their houses, will care little how long or how short they may stand afterwards?

LATE DECORATED WINDOWS.



FROM BOXLEY CHURCH, KENT.



FROM BOUGHTON ALUPH CHURCH, KENT.

GOTHIC WINDOWS

AT THE CHURCHES OF BOXLEY AND BOUGHTON ALUPH, IN KENT.

The small beautiful example of late decorated character, of the date probably of 1370, is from Boxley Church, near Maidstone; this window and a fine corbel head within the church are now the only objects of interest the building possesses, though it was once celebrated for its magnificent rood-screen, and the grandeur of its embellishments.

The larger specimen is from the great west window of Boughton Aluph Church, near Ashford. The date of this window, I am inclined to consider, is after 1500. In one of the transepts is another window of similar character; both of them, although late in style, have a very good effect.

The church, which is a very large one, contains numerous objects well worthy of inspecting. On one side of the chancel is a small piscina, and a single-seated sedilia; the latter somewhat resembling in character the stone confessional chair at Lenham Church, only a few miles distant; but the sedilia at Boughton Aluph does not project from the wall as the chair at Lenham does. With regard to this chair, which was engraved in No. 99 of THE BUILDER, I think there is much greater probability in supposing, that instead of a confessional, it was the abbot's chair. The small stone at the side, which was described as the kneeling-stone, may have served for a seat to one of the officiating chorister boys. I should like to have the opinion of some of your numerous readers on the subject. C.

NEW SALE ROOM, ST. PAUL'S CHURCHYARD.

MR. CHARLES FOWLER, the able architect of Covent Garden-market, has recently constructed a sale-room for Mr. Toplis, at 16, St. Paul's Church-yard, which has the merit of combining a picturesque effect with simplicity and economy. It is 73 feet by 20 feet in the clear; 16 feet high at the walls, and 21 feet to the centre of the roof.

The entrance for the public is near the east end, and the access for goods at the west end; the well-hole of the stairs being covered with flaps, laid flush with the floor when not used. The auctioneer's rostrum projects from a recess in the centre, as shewn in the annexed engraving, and is approached by a private staircase from the offices below. Tables are constructed to form a semi-circle in front of the rostrum, bringing the buyers into the best position in regard to the auctioneer, and at the same time forming an enclosure clear of the company in which the porters can hand round the goods for inspection. A moveable screen about 7 feet high, occasionally shuts off one-third of the room at the west end, for the exclusive deposit of some kinds of goods; and a passage is reserved from thence to the circular enclosure, by which they are brought forward in succession for sale, and replaced when sold.

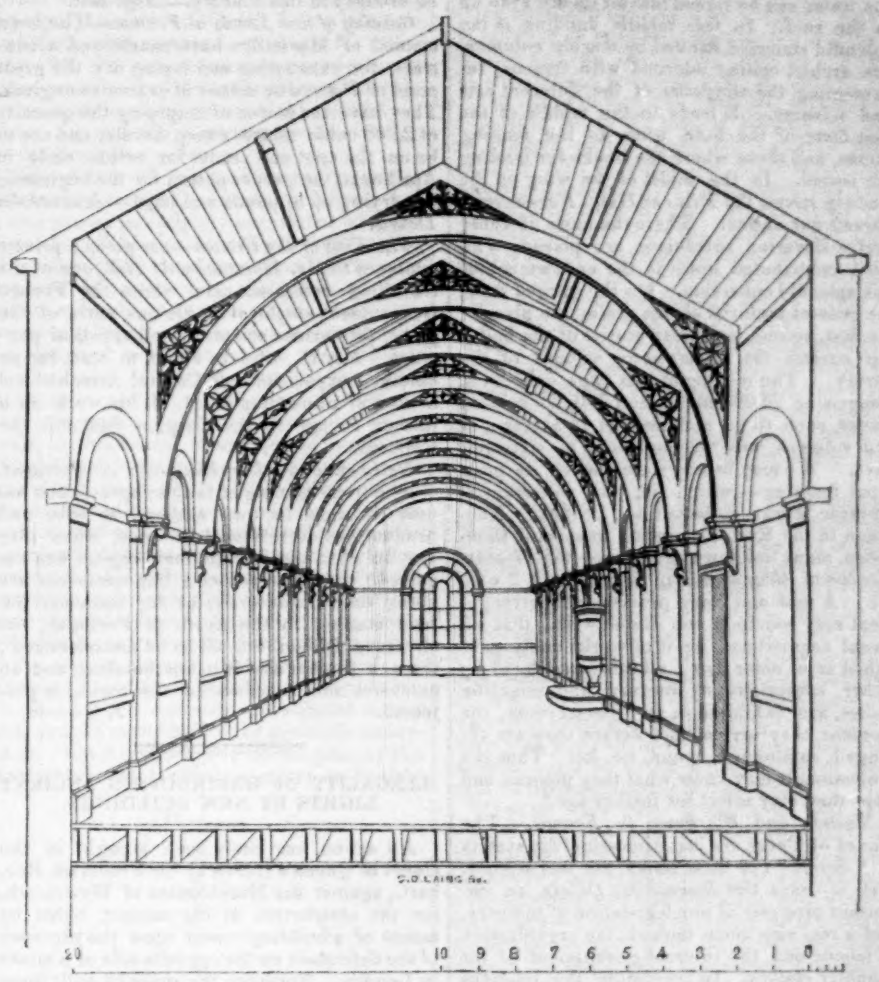
The roof is boarded against the rafters, but all the other timbers are exposed to view; and the whole is planed and varnished.

The range of lights in the centre comprises thirty-six frames, each glazed with a single plate 4 feet 6 inches by 2 feet 8 inches and ⅛ thick, rough from the casting. The light is remarkably strong, at the same time it is so modified by the rough surfaces of the plate-glass as not to be glaring or offensive. The great strength of the glass was an important desideratum in this situation, as skylights are found to be exposed to constant damage from missiles, probably thrown from the cathedral.

The circular ribs of the roof are formed with three thicknesses of 1¼ deal, and footed into iron sockets or corbels, let into stone templates.

As a precaution until the perfect set and settlement of the work, three of the roof-frames have iron rod ties; but they are not intended to be left permanently; as it is not calculated that there will be any lateral thrust.

NEW SALE ROOM, ST. PAUL'S CHURCHYARD.



FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

Plan of a "General Annuity Fund" for the Working-classes in France.—The above subject is, certainly, attracting much attention with our neighbours, as we find, that it has been one of the topics included in the speeches of the ministry to the *sovereign*, on the festivity of the new year. The following extract from an article by Mr. Adolphe Beaumont (the traveller in Ireland), will best explain the views entertained in France on this important topic. "The General Chambers of Manufactures and Commerce have pronounced themselves favourably on the establishment of a general annuity fund for the working-classes (*caisse générale de retraits pour les classes laborieuses*), and we have every reason to think that the General Council of Agriculture will follow the same example. The question will then have made a great step, likely to extend over the whole bulk of the nation, all tending towards the realization of that idea — a "natural and necessary complement of the system of *savings banks.*" Objections have been, it is true, raised against this annuity fund, which, however, will not stand the test of serious sifting. Certainly, *all* workers are *not* in a state of saving; but we have to exert ourselves in the improvement of that class, so that the above cases become as rare as possible. But we must acknowledge, that a somewhat (albeit one-sided) progress *has* taken place for the last fifty years, and which may be the harbinger of still more general *advancements*. We allude to the savings banks, which prove clearly, that the numbers of workers, who are in the position of saving, *are* on the increase. The general fund will still more help that way, because it will receive payments so *extremely small* and reduced, that the humblest will not be precluded from its benefits. By the saving of a few *centimes* a day, it will be possible to acquire an annuity for old age—whose maximum, however, has been wisely limited to 480 fr. (19*l.*) by the commission, which, presided over by Count Molé, contained amongst its members Messrs. Gasparin, Passy, Vivien (all three late secretaries of state), Bignon, Michel Chevalier,* Legentil, President of the Board of Trade of Paris, Olinde Rodriguez, Eichthal, (regent of the Bank of France), Wolkonski (professor at the Conservatory of Arts and Trades), &c. By one of the stipulations of the "*General Annuity Fund Bill*" of France, the wife may obtain the right of depositing her savings in that way, by an interference of the *juge de paix* (magistrate), even against the will of her husband. When the minister alluded to this plan before the king, on presenting to him the General Chambers of Agriculture, Commerce, and Trades—he said, that "they felt honoured in their being the representatives of the working-classes before H. M., and that nothing seems to them more deserving of attention than the improvement of those classes." Mr. Cunin-Gridaine then adverted to "the regulations of children employed in manufactories—regulations, which would inspire them with the ability and inclination for work, and thus regenerate the moral and physical condition of mankind."

Mr. Vicat—chief engineer and director of roads and bridges, who had received from the French Parliament a national recompense for his investigations on lime and mortar, has been promoted by the king to the rank of a commander of the royal order of the Legion of Honour.

Railways in Greece.—This ancient cradle of modern civilization is also on the point of obtaining its most positive improvement—railways. Authorized commissaries have arrived in Greece, for treating with Government on the establishment of a line from Athens to the Pyræus. This line will be the more important, as it will rectify an *error*, which had been perceived too late, viz., of having chosen Athens instead of the latter as the metropolis of the new kingdom. A chief difficulty in the effecting of such plans in Greece, is the purchase of the necessary lands, as hitherto no law of appropriation has been enacted.

The Barrage and Embankment of the Nile—presents greater difficulties than were expected, as the completed plans exhibit an immense amount of labour and capital required. It is, moreover, apprehended that the river, thus hemmed in and led away from its previous course, may form in some places an altogether new bed, or that the sea may encroach on the Delta, where considerable alterations are contemplated. It is said, further, that even the arable land now at hand is not adequately cultivated, for want of hands, and that the land gained by these stupendous hydraulic operations, will be of no avail whatever.

The Royal and Public Library at Munich.—Happy may be considered *those* times, when the scope of a library comprehended chiefly the collecting of books appertaining to civilized Europe. With the expansion of literature, and the knowledge of so many, hitherto hardly attended to—almost all the modern libraries have required reconstruction. Bavaria has not remained behind other (even larger) countries in this respect. It was in the year 1831 that the necessity for the new building for a library and archives at Munich, was laid before the Parliament, and their consent being readily obtained, the foundation-stone was laid in 1832. Situate in the *Ludwig's Strasse*, this structure, erected by *Gärtner*, may rank amongst the grandest monuments of Germany. Towards that street is directed one wing of the square building, 520 feet long, and of a height of 85 feet. The other corresponding wing lies towards *Gärtner Strasse* and the park, where, most judiciously, the working rooms of the officers and the reading rooms have been placed. Here you enjoy a charming view over the whole park, up to the Bavarian mountains, and the morning sun, so genial in northern climes, falls straight on the whole flight of rooms. Two lateral wings, one with a southerly, the other a northern aspect, abut respectively towards the Horse-guards' building and the *Ludwig's* church. The front and

* Once a member of the Fourrierist body—now Councillor of State on extraordinary service.

hind wings are connected by a transversal building, whereby the inner space is divided into two similar squares, in each of which are situate two wells, wherefrom, in case of fire, the water can be forced into all rooms, even up to the roof. In this middle building is the splendid staircase, flanked by marble columns, the arched ceiling adorned with frescos, representing the allegories of the different arts and sciences. It leads to the middle of the first floor of the hind wing, to the reading rooms, and those where the books for lending are issued. In the midst of the wing on the Ludwig street, the Princes Hall (*Fürstensaal*) attracts our notice. There the busts of those twelve Bavarian sovereigns are placed, who most contributed towards the endowment of this splendid collection. On the ground floor, the general archives of the realm are placed; the first, second, and third stories of the building contain the *seventy-seven* saloons of the library. The moving of this huge collection, comprising 20,000 MSS., and 480,000 printed works, each to be reckoned, at an average, at two volumes, was accomplished in sixty-two days. We may briefly state one of its principal features — which is, the collection of Chinese works collected by Professor Neümann in the East, amounting to several thousands, many unknown in Europe—the *Museum Etruscum Gregorianum*, Romæ, 1842, 2 vols. fol. A new and very praiseworthy arrangement may conclude our sketch—viz., that all *recent* acquisitions, be it of works lately published or of older date; all those presented by either sovereigns or literary and scientific bodies, are exhibited in an especial room, the moment they arrive, and *before* they are arranged, catalogued, bound, &c. &c. Thus the professionals may know what they possess, and what they may select for further use.*

Masters and Workmen in France.—The House of Peers are just discussing the system of "*livrets*" (or little books) *for journeymen*. This is—says the *Journal des Débats*, an important progress of our legislation of industry, and a real step made towards the organization of labour and the internal government of the humbler classes. In regulating the relations between master and men, the *livret* surrounds both with the same protection, it guarantees the accomplishment of their reciprocal obligations, it insures the proper order of workshops and, the regularity of work. In some degree, it puts a stop to the abuses of *competition*, by closing to it the illegitimate road of *embauchage*. The first establishing of the *livrets* remounts in France to the later years of the last century, and although the revolution swept away indiscriminately the bad and the good, the *livrets* have been retained in several well-conducted and prospering manufactories. The regulations run as follows: — "Journeymen and apprentices employed in workshops, manufactories, mines, forges, quarries, carpentery, and other works —be it that they work on the establishment, or at home, will be obliged to provide themselves with a *livret*.—When the journeyman enters the place of a master, the latter will inscribe on the book the date of his entry.—And at his leaving his employment, the master shall inscribe the date of his leaving, an acquittal of the engagements the journeyman or apprentice might have entered upon, or the amount of advances which the latter might be indebted to the establishment." It is to be borne in mind, that nothing about the character of the servant is to be entered on these books, which are *not* to be expedients of police.

The Railways of Germany—in winter.—Mr. Negrelli, one of the Austrian employès of the road and bridges department, has started from Vienna for Bohemia, to inspect the damage done by the late snow-storms to some of the railway bridges, &c., and to superintend the repairs. It may be put down as an axiom, that beyond 48° of latitude, *no* railway can be considered practicable with any degree of certainty on the Continent, during the winter months.

Large increase of Master-paintings to be expected in England.—The celebrated *Hoofman's* collection of pictures at Haarlem has been purchased by a Mr. *Nieuwenhuys*, and will be brought over, at least its best specimens, to this country. The picture gallery of the late Baron Verstalk van Saelen, collected by him through the space of a long life and at much expense, is selling by the heirs, and will also be brought to this country.—*Allg. Zeit.*

Gaining of new Lands in France.—The town council of Marseilles have sanctioned a contract, for exhausting and laying dry the great pond of *Pourra* by means of extensive engines. They have the power of emptying the quantity of 2,200 cubic mètres every minute, and are to be on the spot and ready for action early in April next, the proper period for the beginning the drying up of ponds and bogs.—*Journal des Débats.*

The King of the French—has given a private audience to Mr. *Hommaire de Hill*, one of the travelling commissioners, whom the French Government employs in various parts of the globe, for various scientific and artistical purposes. Mr. H., who is about to start for an extensive expedition into Central Asia, had the honour of presenting to H. M. his work on a former voyage to the Caspian Sea and the Caucasus.

Railways and other Buildings in Portugal.—The overstraining of railway speculation has only damaged its own authors, as wise and prudent people retreated at once, when they saw on what unsafe basis their capital was required. In other respects improvements are going on satisfactorily, as for instance, the road making in the north of Portugal; the streets of Lisbon, are all to be macademized; the new theatre also is a fine building, and an extensive new aqueduct for the capital is projected.

J. L——y.

* Such of our readers as are interested about libraries and their arrangement, will find a good description of the chief curiosities, &c. in a little work: Ueber die Königl. Hof und Staats—Bibliothek für Besucher derselben. München, 1843, 8vo.

ILLEGALITY OF OBSTRUCTING ANCIENT LIGHTS BY NEW BUILDINGS.

An action has lately been brought in the Court of Queen's Bench by Sir Frederick Roe, bart., against the Marchioness of Westmeath, for the obstruction of his ancient lights by means of a building raised upon the premises of the defendant on the opposite side of a street in London. Formerly the space so built upon had been a mere wall, but lately the marchioness had erected a conservatory and some other rooms over and above the height of the wall, whereby the light in some four or five of the apartments was materially diminished, so that the inmates were unable to read; the effect was sensibly felt in the diminution of the plaintiff's comfortable enjoyment of the light, and in the exclusion of the beams of the sun, for a considérable period of the summer. A vast number of witnesses, architects and others, were called to prove the case, and various plans, models, and elevations were introduced for the information of the court and of the jury.

The Solicitor-General, for the defendant, assured the jury that the case was without a precedent; that no plaintiff before had ever had the courage to risk an action for obstruction of the light to his windows, in consequence of an alteration in the height of a neighbour's house upon the opposite side of a public street. Such an assumption of right upon the part of owners of houses in this metropolis would, if sanctioned by the decisions of juries, soon put an end to all those improvements by individuals, in respect to their houses, so very general at present, and which so materially contributed to the convenience and beauty of the capital.

Mr. Justice Wightman, in summing up the evidence, said that the question in dispute between the parties was more one of law than of fact. He should therefore submit to them this question only. Whether, in their opinion, there had been a substantial diminution of the comforts of the plaintiff in consequence of the buildings that had been erected by the defendant, taking into consideration the situation of the premises and the purposes to which they had been applied.

The jury, after an absence of half an hour, handed up a written verdict.

Mr. Justice Wightman having read it, said, you are of opinion that the beneficial occupation of the plaintiff has been substantially interfered with, &c.

The foreman replied, that such was their opinion.

Mr. Justice Wightman.—Your verdict, then, will be entered for the plaintiff, subject to the opinion of the court, as to whether the fact of their being a public street between the houses of the plaintiff and the defendant, is not a sufficient answer to the present action.

Nominal damages, 40s.

THE AUST BRIDGE.

Sir,—As you alluded to the proposed suspension bridge over the Severn, at the Aust passage, in the last number of your journal, and have not favoured us with your opinion, perhaps you will allow me to make a few observations on the subject.

Although willing to add my meed of approbation to the magnitude and boldness of the design, I am very much disposed to question its practicability, notwithstanding the sanction seemingly accorded to it by an eminent authority, inasmuch as we have not an instance of the suspension principles having been carried out to any thing like the extent (of span) proposed; nor has it yet, I believe, for obvious reasons, been applied to railway purposes even on a small scale. The largest suspension bridges we have in existence are the Fribourg, in Switzerland, 870 feet span; the Hungerford Foot-bridge, with a central span of 676½ feet, and a total length of suspended roadway of 1,352 feet; the Menai-bridge, with a central span of 550 feet, while the ends are supported on arches of masonry; a circumstance, I think, which deteriorates from the merit of that work. There is also the proposed Clifton-bridge over the Avon, near Bristol, the span of which is to be, when completed, 700 feet.

It is to be regretted, that this bridge company do not exert themselves to complete Brunel's magnificent structure, more particularly as the towers on each side, in their present neglected state, look like monuments erected to commemorate either their pusillanimity or their folly. I have been told that Sir John Guest, bart., has offered to complete the work if the company would mortgage the tolls for a certain period.

The Aust-bridge is intended for the double purpose of railway and general traffic; and this will be attended with great inconvenience, unless a screen is erected to separate the roadways, and sufficient width allowed for each description of traffic; the increased width will, of course, add considerably to the weight to be suspended and supported. I rejoice at the progress the science of engineering is making in the present day, and that magnificent works are daily springing up into maturity and perfection as it were by the magic wand of the engineer, and throwing new lights on the arts of construction, and the better distribution and economy of material; but I hope, the universal success that has hitherto attended our efforts in the development and successful completion of our public and private works, will not induce us rashly to embark in enterprises that have not received the sanction of venerated experience, or been satisfactorily proved to be capable of construction by a series of undoubted experiments. With practical science, as with every other puny effort of man, there is a limit, "thus far shalt thou go, and no farther." I fear in this instance the projectors have over-estimated their own abilities, and the tensile powers of the material they propose to employ. I have thrown out these hints for the consideration of the public and the projectors, and trust they will be considered worthy of a place in your journal.

I am, Sir, yours, &c., B. B.

Merthyr Tydfil, S.W., Feb. 10th, 1846.

The House of the Bonaparte Family.—The town-council of Ajaccio have decided that the house on the Piazza Ramolini, where the emperor was born, should be acquired, after the demise of its present occupant, Dame Letizia. It is to be put in the same condition as it was at the time of Napoleon's birth—to be a monument of gratitude for one of the greatest lawgivers modern Europe ever possessed. It is to become public property, open for visitors the same as other public monuments in France, free of charge.

Caligraphic Black Lead Pencils.—Messrs. Wolff have given us the opportunity of trying some of their caligraphic black lead pencils, and we feel bound to say that we have found them very satisfactory, being free from grit, and keeping a good point.

NOTES IN THE PROVINCES.

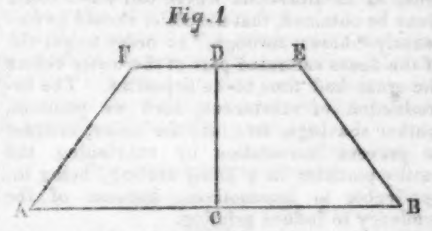
It has been determined to improve and enlarge the interior, and to restore the exterior of the ancient parish church at Worksop. At a meeting of the inhabitants, held last week, the Duke of Newcastle in the chair, Mr. R. Nicholson's plans, by which additional accommodation for 300 persons will be obtained, were adopted. The total expense is estimated at 900*l.* A subscription is to be opened forthwith.——The first stone of Galway Queen's College will be laid towards the close of next month. The site is Belmont, within about ten minutes' walk of the remotest district of the town; it is spoken of as being very salubrious, and highly picturesque. The edifice will be in the Gothic style, after the design of Mr. Kean.—The sum of 1,950*l.* has been subscribed towards rebuilding Trevethin church, for which plans and specifications are in course of preparation. It is intended to take down the old fabric, and on its site to erect the new church, which is to be finished by October.——A Gothic pulpit, of carved oak, from a design of Mr. Hutchinson, jun., has just been erected in St. James's church, Hull. It is octangular, supported by an open square pedestal. In the front compartment is a shield bearing the crest of the donor, the Rev. W. Knight, M.A., incumbent, supported by a pair of cherubim.—— A spacious school, in the early English style, and capable of accommodating 800 children, has been erected at the extreme end of Grafton-street, Toxteth park. At the back of the main building two houses have been erected for the accommodation of the master and mistress. The whole of the building was contracted for by Mr. Parr, of Litherland, and will cost upwards of 2,300*l.*, which sum has already been collected, John Gladstone, Esq., of Fasque, who erected and endowed the church at his own expense, giving 600*l.*——A quarry of excellent marble has been discovered at Aberfoyle, on the estate of the Duke of Montrose, and near to the line of the Forth and Clyde Railway.——The Earl of Lonsdale has given a donation of 50*l.* in aid of the subscription for rebuilding the parish church of Aspatria, Cumberland; that ancient building being inadequate for the accommodation of the residents of that locality.——It is stated that there are nearly 100 building societies in Liverpool, and that their capital amounts to 240,000*l.*——The newly-erected Roman Catholic chapel, in St. John-street, Bridgwater, will be opened on Tuesday next. It is dedicated to St. Joseph.——At a special meeting of the Severn Commissioners, held last Saturday at Bristol, it was unanimously resolved to erect a new bridge at Upton, and to raise £30,000 to defray the cost of the same. Mr. Williams handed in the plans of the proposed structure. It is a "bascule," or perpendicular drawbridge; and in reference to this subject Lord Hatherton remarked that the people of Upton need not be under any apprehension, for that at Amsterdam and many other places on the continent the same kind of bridge was in use, and had not been found to offer any obstruction to the traffic. ——The Grammar-school Chapel, at Clapham, was opened on Saturday last by the Bishop of Winchester. It is built in the early English style of architecture, and contains seats for about 250 persons. Its dimensions are 50 ft. by 20 ft. wide, and 35 ft. high. Over the communion-table are three painted windows, which were presented to the chapel by the pupils of the grammar-school. The subject of the centre window is the Apostle John, the chapel itself being dedicated to that saint. There are painted windows also on each side of the chapel, representing Bishops Cranmer and Ridley.——The town of Glasgow was visited by a very destructive hurricane, accompanied by a heavy fall of rain, on Saturday last. A new tenement of three stories in height, situate in Cook-street, Gorbals, after rocking to and fro for some considerable time, fell and buried in its ruins a small one-story house that rested against its gable. The whole was converted into a mass of rubbish. Fortunately, there was sufficient warning of the impending danger, and the inmates escaped with their lives. About the same time, part of the roof and walls of the foundry belonging to Mr. Robertson, in Surrey-street, Gorbals, were blown down. In the same neighbourhood the extensive rope-works of Mr. Wales was demolished.

METHOD OF SETTING OUT A CANT GEOMETRICALLY.

At page 81 of The Builder for the 14th current (February, 1846), a correspondent, who signs himself "J. C. W.," in a letter to the Editor, proposes as a problem for solution:—To set out a cant geometrically in such a manner, that the three sides of the projection shall be equal to each other, the base of the cant and its perpendicular breadth or central line being given.

The solution of this problem is a matter of the utmost simplicity, so much so indeed, that to any person but slightly acquainted with the elementary principles of geometry it must be self-evident; and the circumstance of its being proposed for solution in the pages of The Builder furnishes another proof, if any such were wanted, how small a share of geometrical knowledge is possessed by the generality of practical men. If the problem had been proposed as a curiosity in science, or with the design to puzzle those who are prone to inquiries of this nature, it would have been altogether beneath the notice of the merest tyro; but since it has a direct reference to certain departments of constructive practice, it merits our attention on that account; and as the proposer is obviously seeking for practical information, the following solution is supplied for the purpose of meeting his views. Other and more elegant solutions might be given, such, for instance, as tracing the locus of an equation of the second degree; but as simplicity of operation is always to be preferred in practice, we consider the method here adopted as the best, and the most likely to be generally understood. Let ABEF, fig. 1, be the plan of the cant which the problem requires to be laid

Fig. 1

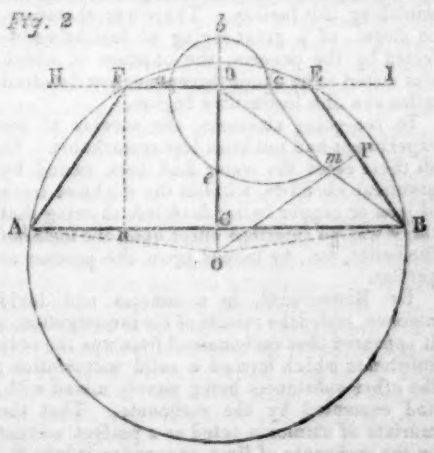


down; AB the base or opening of the projection; CD the central line or perpendicular breadth of the plan, and AF, FE, and BE the equal sides, of which FE is parallel to AB; AF and BE being similarly placed with regard to the parallel sides AB and FE.

Since AB is bisected in C, and FE in D, the plan is manifestly divided into two equal and symmetrical parts with regard to the central line CD, and because by the conditions of the problem the three sides, AF, FE, and BE are equal among themselves, it manifestly follows, that DF or DE is equal to one-half of AF or BE; and this, in reality, is the only circumstance that requires to be discovered to lead us directly to the solution of the problem. The geometrical construction is as follows:—

Draw the straight line AB (fig. 2) in any convenient direction at pleasure, which make

Fig. 2



equal to the given base of the cant or projection; bisect AB in C, and at C, the bisecting point, erect the perpendicular CD, which make equal to the given breadth or central line of the plan; and through the point D draw HI parallel to the base line AB, which will determine the direction of one side of the cant.

Draw the straight line BD to connect the given points B and D, and on D as a centre; with any distance D*a* taken at pleasure as a radius, describe the semi-circle *abc* meeting DI in the point *c*, so that D*a* and D*c* are equal to one another; then, on *c* as a centre, with the distance *ca* as radius, describe the circular arc *aem* meeting BD in the point *m*; draw *mc*, and through the given point B, one extremity of the base line AB, draw BE parallel to *mc* meeting DI in E; then is BE one side of the required cant. Make DF equal to DE and draw AF, so shall AF and FE be the other two sides, and ABEF is consequently the cant or projection sought. Bisect BE in P, and at the point P erect the perpendicular PO to meet DC produced downwards in O; then is O the centre of the circle which circumscribes the figure sought, and passes through its angular points at A, B, E, and F.

Such, therefore, is the geometrical solution of the problem, and it is obvious that nothing can be more easily effected; but in order that the reader may have no misgivings as regards the correctness of the principles here adopted, we think proper to supply the following demonstration.

The distance D*a* is assumed at pleasure, and since D*c* is equal to D*a*, *ca* is equal to twice D*c*; but *cm* is equal to *ca*, the two being radii of the same circular arc *aem*; consequently, *cm* is equal to twice D*c*. Now by the construction, BE is parallel to *mc*, therefore, in consequence of the parallelism of these lines, the triangles D*mc* and DBE are similar, and their homologous sides proportional; that is, DC is to *cm*, as DE to EB; but *cm* is equal to twice D*c*, consequently EB is also equal to twice DE, and this is the condition that the problem requires to be satisfied; hence the truth of the construction is manifest.

What we have done above is all that the proposer requires, and however easy may be the process of delineation, or the determination of the sizes by the principles of geometry, it is otherwise with the algebraic and numerical solutions, and since it may be necessary in some instances to know the exact numerical value of the equal sides, as obtained from calculation and not from measurement, it strikes us that the solution of the problem will not be complete or satisfactory, unless the method of obtaining the sides by calculation be also exemplified, and for this purpose—

Let F*n* be drawn from the angle of the figure at F, perpendicular to the base line AB, and meeting it in the point *n*; then, since F*n* is parallel to DC, *n*C must be equal to FD; but FA by the question, is equal to twice FD, or twice *n*C; and consequently, FA squared, is equal to four times the square of *n*C. Now, $\overline{FA}^2 = \overline{An}^2 + \overline{Fn}^2$ by the property of the right angled triangle; hence we have, $\overline{An}^2 + \overline{Fn}^2 = 4\overline{Cn}^2$; but, by subtraction, C*n* = CA — A*n*, where A*n* is unknown; therefore it is, $\overline{An}^2 + \overline{Fn}^2 = 4(CA - An)^2$; and this, by expansion and transposition, becomes $3\overline{An}^2 - 8CA \cdot An = \overline{Fn}^2 - 4\overline{CA}^2$, which is an adfected quadratic equation, involving A*n* as the quantity to be determined; and if this equation be reduced by the rules appropriated for that purpose, we shall obtain

$$An = \tfrac{1}{3}\left\{4CA \pm \sqrt{3\overline{Fn}^2 + 4\overline{CA}^2}\right\},$$

a result in which the negative sign only can be employed, the positive one being inconsistent with the conditions of the problem. The following is the rule in words for reducing this equation:—

Rule.—To three times the square of the perpendicular breadth, or central line of the projection, add four times the square of the semi-base; then, from four times the semi-base, subtract the square root of the sum, and take one-third of the remainder for the quantity sought. From the semi-base subtract the quantity thus found, and twice the remainder will be the side of the cant required.

Example.—Suppose the base of the projection to be 40 feet, and the perpendicular breadth or central line 15 feet, and let it be required to determine the side of the cant.

Here by the rule we have $15 \times 15 \times 3 = 675$
$20 \times 20 \times 4 = 1600$
Sum = 2275

the square root of which, is $\sqrt{2275} = 47{\cdot}69$; then we get $An = \frac{1}{2}(20 \times 4 - 47{\cdot}69) = 10{\cdot}77$; and finally, it is $FE = 2(20 - 10{\cdot}77) = 18{\cdot}46$ feet, the length of the equal sides of the figure.

This is the method of obtaining the result by the principles of algebra, but there is still another method to which we beg leave to direct the reader's attention, as it may in most instances be more readily applied than that which we have just illustrated; it is as follows. By the construction, Da or Dc which is equal to it, is taken of any convenient magnitude at pleasure, we may therefore suppose it to be represented by any particular number, say 5; then, since Cm is equal to twice Dc, we have $Cm = 10$.

Now $BD = \sqrt{BC^2 + DC^2} = \sqrt{225 + 400} =$ 25 feet, and the angle CBD is equal to BDE; but the angle CBD is such, that tan. $CBD = \frac{DC}{BC} = \frac{15}{20} = 0{\cdot}75$, the natural tangent of 36° 52′ 12″ very nearly; therefore, by trigonometry, we have

$Cm : Dc ::$ sin. BDE : sin. Dmc; that is,

10 : 0·6 :: 5 : 0·3, the natural sine of 17° 27′ 28.″

Here then, in the triangle mDc, we have given all the angles and the two sides Dc and mc, to find the third side Dm, and for this purpose it is

sin. $mDc : mc ::$ sin. $mcD : Dm$; that is,

0·6 : 10 :: 0·82236 : 13·54 feet nearly, and by the property of similar triangles, we get

$Dm : Cm ::$ DB : EB; that is,

13·54 : 10 :: 25 : 18·46 feet, the same as before.

We have been very full and explicit in the resolution of this problem, not indeed from any conviction or impression that it makes on our mind as regards its utility or importance, but with the view of instigating the proposer, and others that may be similarly situated, to the study of arithmetic and constructive geometry, as without an accurate and extensive knowledge of these departments of science, they will in many cases find themselves either obliged to grope at random after their object, or to make their escape from surrounding difficulties by following blindly a slavish routine; whereas with a competent acquaintance with the principles of practical science, as applied to the different branches of their respective professions, they would be enabled to see their way through every intricacy, and thereby to bring their undertakings to a successful and satisfactory termination. T.

*** After the above was in type, we received nine other communications on the subject, some of which possess the merit of great simplicity.

INSTITUTION OF CIVIL ENGINEERS.

Feb. 17th. Sir John Rennie, president, in the chair.—The paper read was "On water for locomotive engines, and its chemical analysis," by William West, Associate. The author commenced by commenting somewhat severely on the want of precaution manifested in the choice of the watering stations on railways, where, he contended, previous analysis of the quality of the water would have avoided not only considerable expenditure in subsequently procuring fit kinds of water, but would have prevented great destruction of the boilers, and inconvenience from the tendency to prime which was induced by certain substances being either in solution or held in suspension. He then treated of the various kinds of earthy crust or "fur" deposited by evaporation; these he shewed the various compositions of; the principal components being carbonate and sulphate of lime, whose powers of conducting heat were so inferior, that when deposited upon a metallic plate or tube, which should be in contact with the water, the caloric traversed slowly, diminishing the evaporating power of the fuel in proportion to the accumulation of deposit, and, at the same time, oxydating the metal with great rapidity.

The various substances present in spring or river waters, such as soda, lime, magnesia, as bases, and sulphuric acid, carbonic acid, and chlorine, which represents hydrochloric or muriatic acid, iron, and organic matters, were then reviewed, and the discrepancies in the results of analysis by different chemists were treated of, and it was shewn, that although there were apparent differences of opinion among chemists, they were not in reality so great as existed among engineers on the relative merits of the locomotive and atmospheric systems, the screw and the paddle-wheel, and the broad and narrow gauge. In treating of the "modus operandi" of analysis, the imperial gallon was recommended as a uniform standard of quantity for the chemist, as being a measure known to and understood by all, and enabling the engineer to discard the minuter fractions of the chemist, and to attend with exactitude to whole numbers in results. As an instance, it was stated, that an engineer might be tempted to disregard the presence of three-quarters of a grain of deposit from a pint of water, but the deposit of one thousand gallons of such water would amount to fourteen ounces avoirdupois, which was a very tangible quantity.

In examining the tendency of different compounds to deposit, it was shewn, that sulphate of lime was more disposed than the carbonate to attach itself to the plates: that a mixture of the sulphate caused a harder deposit than the carbonate alone, and therefore waters containing much sulphate should be avoided. It was shewn also, that although what is generally termed "hard" water might be considered inferior to "soft" water, yet in the question of deposit, hardness and softness were only vague terms, and could not be accepted as positive rules; inasmuch, as muriate of lime which imparted great hardness to water, and therefore rendered it unfit for domestic purposes, was a very soluble salt, and therefore did not form any detrimental deposit or crust during ebullition. It appeared that the author could only recommend, as a means of precaution against incrustation, the selection of waters which by analysis were found to contain only soluble salts, or in situations where bad water could alone be obtained, that the boiler should be frequently "blown through," in order to get rid of the dense saturated part of the water before the crust had time to be deposited. The introduction of substances, such as potatoes, leather shavings, &c., into the boiler, in order to prevent incrustation by enveloping the earthy particles in a slimy evating, being inapplicable to locomotives, because of the tendency to induce priming.

The paper noticed slightly the various patents for preventing adhesion in boilers, and in the appendix gave the analysis of many kinds of water which had been submitted to the author professionally for his opinion. In the discussion which ensued, Mr. Gooch demonstrated the importance of the subject to railway and steam-boat companies, and stated that his attention had been called to a process invented by Dr. Ritterbant, for preventing incrustation in boilers. That process consisted simply in the addition of a small quantity of muriate of ammonia to the water in the boiler. It had been found, that this process not only effected the object proposed, but that it disintegrated and removed the incrustation already formed. In all the locomotives in which it had been used, the steam was much more readily generated, so that the blast pipes of several engines had been enlarged without diminishing this facility. There was, therefore, no doubt, of a great saving of fuel being effected by the process, the expense of which was stated to be about threepence per hundred miles run of a locomotive engine.

In sea-going steamers, the success of the experiment had not been less remarkable. In all these cases the water had been tested by practical chemists, without the slightest trace of iron or copper being detected, shewing that there was no injurious effect upon the metal of the boiler, &c., he looked upon the process as perfect.

Dr. Ritterbandt, in a concise and lucid manner, stated the results of his investigations; it appeared that carbonate of lime was the only substance which formed a solid incrustation; the other substances being merely mixed with, and cemented by the carbonate. That the muriate of ammonia acted as a perfect solvent on the carbonate of lime, converting it into the soluble muriate, without acting upon the boiler. He gave a practical demonstration of the action of the muriate of ammonia on calcareous water to the satisfaction of the president and members, who expressed themselves in terms of approbation of the great practical utility of the invention, and of the manner in which it had been brought before the society.

WILLIAM OF WYKEHAM.

The first part of "Old England's Worthies," one of Mr. Knight's wonderfully cheap and instructive illustrated works, contains a sketch of the life of this great architect, from which we condense the following:—

There is an old tradition, perhaps not worthy of much credit, that upon the wall of a tower in Windsor Castle, known as the Winchester Tower, was inscribed, 'This made Wykeham.' The great churchman raised this tower as the architect of Windsor Castle, working under the commands of his patron Edward the Third. It is further said, that the king being offended at this inscription, its more obvious meaning was dexterously explained away, seeing that it should be interpreted to record that the building of the castle was 'the making' of the architect. There are other proud edifices still remaining upon which might be inserted 'This made Wykeham' in the most complete sense. No man ever left more permanent traces of his course and character. The founder of Winchester College, and of New College, Oxford,—the builder of the noblest part of Winchester Cathedral,—had a title to be called their 'maker,' with no king or subject to dispute his pretensions. He was one of the very few men who, having raised themselves by their abilities and integrity to riches and honour, worked not sordidly for themselves to heap up treasure, but nobly employed their wealth in works of the highest public utility. The life of such a man is for example. William de Wykeham, or of Wykeham, was born at Wykeham or Wickham, in Hampshire, in the year 1324, and, as his biographer Bishop Lowth has shewn, some time between the 7th of July and the 27th of September. The parents of Wykeham are held to have been poor, but of creditable descent and reputable character.

There seems to be no reason for supposing that he ever studied at Oxford, as has been affirmed by some of the later writers of his life. It is evident, indeed, that he had not had a university education, and that he never pretended to any skill in the favourite scholastic learning of his age. His strength lay in his natural genius, in his knowledge of mankind and talent for business; and probably the only art or science he had much cultivated was architecture. He is said in an ancient contemporary account, to have been brought to court when he was no more than three or four and twenty, which would be about the year 1348; but the earliest office which there is the evidence of records for his having held, is that of clerk of all the king's works in his manors of Henle and Yesthampsted, his patent for which is dated 10th of May, 1356. On the 30th of October in the same year, he was made surveyor of the king's works at the castle and in the park of Windsor. It is affirmed by a contemporary writer to have been at his instigation that King Edward pulled down and rebuilt great part of Windsor Castle. Wykeham had the sole superintendence of the work. Queenborough Castle, in the Isle of Sheppy, was also built under his direction.

Upon the death of William de Edyngton, on the 8th of October, 1366, Wykeham was immediately, upon the king's earnest recommendation, elected by the prior and convent of Winchester to succeed him as bishop of that see.

At the period of Wykeham's election to the see of Winchester, the bishops of that diocese had no fewer than twelve different castles or palaces, all furnished and maintained as places of residence. Wykeham's first undertaking, after he found himself in possession of the see, was to set about a thorough repair of these episcopal houses. To these palaces, or castles, the Bishops of Winchester resorted in turns, 'living, according to the custom of those times, chiefly upon the produce of their own estates. So great a demand as the bishop had upon his predecessor's executors for dilapidations could not very soon or very easily be brought to an accommodation; however, the account was at last settled between them without proceeding on either side to an action at law. In the first place they delivered to him the standing stock of the bishopric due to him by right and custom: namely, 127 draught horses, 1556 head of black cattle, 3876 wethers, 4777 ewes, 3521 lambs; and afterwards for dilapidations, in cattle, corn, and other goods, to the value of 1662*l.* 10*s.* sterling.' Before his repairs were accom-

plished, Wykeham had disbursed 20,000 marks of his own revenue.

The building of the college at Oxford, which he called 'St. Mary College of Winchester in Oxford,' was begun in 1380, and was finished in 1386; that of the college at Winchester was begun in 1387, and was finished in 1393. The papal bull confirming the statutes of the college at Oxford is dated 19th July, 1398. As soon as his two colleges were erected, he entered upon another great work, which still remains a monument of his taste and munificence: he resolved to rebuild his cathedral in the greater part of its extent. This undertaking he commenced in 1395, and he just lived to see it brought to a close in about ten years after. His death took place at South Waltham, about eight o'clock on the morning of Saturday, the 27th of September, 1404.

WESTMINSTER COURT OF SEWERS.

On Friday the 13th, a numerously attended special court was held, Captain Bague, R.N., in the chair. Mr. Le Breton moved, and Mr. T. L. Donaldson seconded. "That the following order of court of the 16th of January, 1846, that it is not expedient to invite candidates to apply for the office of surveyor until a trial shall have been made of the fitness of Mr. Phillips for that office, whose form of sewer has been adopted by this court, be rescinded." Carried:—Ayes, 18: Messrs. Allason, Bathurst, Baylis, Branscomb, Cantwell, Crace, Chalmers, T. L. Donaldson, W. L. Donaldson, Gutch, Hawkes, Kendall, Knight, Le Breton, Mayhew, Perry, Willoughby, and John White. Noes, 12; Hon. Philip Bouverie, Hon. Fred. Byng, Messrs. Bidwell, Cole, Cumberlege, Fuller, Godrich, J. Gunter, R. Gunter, Leslie, Willmott, and Wood.

Mr. T. L. Donaldson moved, and Mr. Edward Willoughby seconded, "That a chief surveyor be appointed at a salary of 500*l.* per annum."

An amendment was moved by Mr. Robert Gunter, and seconded by Mr. Baylis, that the salary of chief surveyor be 400*l.* per annum. The amendment was lost, eleven voting for it, twelve against it.

The original motion was then put and lost:—Ayes 11; noes 12.

Notice was given of motions to rescind various other recent orders of court.

LIST OF NEW PATENTS

RELATING TO ARCHITECTURE, ENGINEERING, &c. GRANTED FOR ENGLAND.

Furnished by Mr. A. Prince, of the Office for Patents of Inventions, Lincoln's-inn Fields, London.

[SIX MONTHS FOR ENROLMENT.]

Conrad Haverkam Greenhow, of North Shields, gent., for improvements in the construction of railways and railway carriages. Jan. 6.

Charles Chinnock, of Cook's Grounds, Chelsea, for improvements in the construction and methods of extending and compressing articles of furniture for domestic use, also applicable to cutlery, workmen's tools, windows, blinds, shutters, and similar useful purposes. Jan. 12.

George Tillett, of Snow-hill, ironmonger, for improvements in stoves and fire-places. Jan. 13.

Joseph Maudslay, of the firm of Maudslay and Field, of Lambeth, engineers, for improvements in propelling and propelling machinery. Jan. 13.

Edmund Leahy, of Cork, Ireland, civil engineer, for certain improvements in locomotive carriages intended to be employed on ordinary roads. Jan. 15.

William Benson, of Allerwash House, Haydon-bridge, Northumberland, gent., for certain improvements in machines for the manufacture of tiles and other plastic substances. Jan. 15.

John Braithwaithe, of Bedford-square, civil engineer, for certain improvements in heating, lighting, and ventilating. Jan. 20.

William Malins, of Mansion House-place, London, and West Bromwich, Stafford, iron master, for certain improvements in the construction of buildings. July 20.

John Nott, of Cork, gent., for certain improvements in the means of communicating intelligence from one place to another. Jan. 20.

George Hinton Bovill, of Millwall, engineer, for improvements in the manufacture of iron. Jan. 31.

Andre Etienne, of Hatton-garden, gent., for improvements in the construction of railways, railway-carriages, and in the means of preventing accidents on railways. Jan. 31.

James Pilbrow, of Tottenham, engineer, for certain improvements in propelling on land and water. Jan. 31.

IRELAND.

Furnished by Rich. Telford, Office of Patents, 5, Harcourt-street, Dublin.

William Newton, of the Office for Patents, 66, Chancery-lane, London, engineer, for improvements in machinery, to be employed in the manufacturing of nails, rivets, screws, and pins. December 30, 1845.

Correspondence.

RETURNS RELATING TO THE BUILDINGS ACT.

Sir,—At the present time, while the expediency of revising the new Buildings Act is being generally mooted, I consider it highly desirable that we should have as much official *data* as possible, to assist in guiding us in our reasonings, convictions, and suggestions. With this view, I beg to express a hope, through the medium of your valuable work, that some member of Parliament will move for a return of the working of the Act, commencing with the appointments of the respective officers, and containing accounts of the expenses of each department; the receipts in the shape of grants, fees, contributions, &c.; the total number of awards and modifications made; the number of candidates who have presented themselves for examination, accompanied by the results; and such other information as may enable the profession, as well as the public, to judge more accurately than they can at present of the value of the existing law.

In the event of your taking the same view as myself of the necessity of these returns, I trust that you will use your influence in endeavouring to get them made as early in the session as possible.—I am, Sir, yours, &c.,

Struere.

Miscellanea.

The Church of St. Denis, Paris.—A correspondent of the *Literary Gazette* says, some alarm has been excited by the discovery that one of the towers of the Abbey of St. Denis is in danger of falling in. It was only a few years ago that this splendid and ancient church was restored by his majesty. Any accident happening to it would be deeply lamented by every one of those who, no matter what be their country or their creed, cannot gaze upon a venerable historical monument without emotion. Of all the historical edifices of France, perhaps that of St. Denis is the most interesting. It was one of the very first churches that Christianity caused to be erected in the kingdom of France, and is venerable from its great age alone—a thousand years or more. For centuries it was the burial-place of the kings of France; and their ashes reposed in peace within its walls until scattered to the winds by the fury of the revolution. Even now it contains their tombs, piously restored by the present king. It is remarkable for its architectural beauty, for its old painted glass, and for the chaste elegance of its decorations. It has figured, too, in many important national events. Of course, prompt measures have been taken by the authorities to guard against any danger to so venerable a pile, and it is to be hoped that they will be crowned with success.—We learn since that the tower must be taken down.

Concrete.—We learn from a French paper that the works for the auxiliary port of La Joilette, at Marseilles, are commenced. Immense blocks of concrete, 13 yards cubic measure in size, have been sunk for the foundation, and by the effects of time and submersion will form one solid immovable mass. The cost of each block, with labour of sinking it, is estimated at 300*f.*

Archæological Institute.—At the last meeting of the committee, held on the 13th, for archæological discussion, it was announced that, in consequence of the interest expressed by the members of the Institute in these meetings, and the want of sufficient room to accommodate them, the next meeting would be held at the Institution of Civil Engineers, 25, Great George-street, Westminster.

Society of Antiquaries.—At a recent meeting of the society, Mr. A. J. Kempe communicated an account of the circular encampment which occupies the commanding position at the S.W. angle of Wimbledon Common, considered by Camden as marking the place where the conflict occurred between Ceaulin, King of the West Saxons, and Ethelbert, King of Kent, A.D. 568. In Camden's time, this camp was called Bensbury. Mr. Kempe regarded this fortress as a work of earlier date than the sixth century. The appellation of such ancient fortresses may supply some evidence in regard to the period of their construction, and Mr. Kempe remarked that the British term, Dinas, Dunum, or in more soft pronunciation, Ton or Tune, a fortified elevated post, appears always to indicate a British origin. The camp at Wimbledon has all the characteristics of such British strongholds. At the following meeting Mr. Godwin, on exhibiting a peculiarly long bronze spear-head, lately found in the Fulham-road, took the opportunity to say "that an increasing anxiety is observable amongst all classes of people for the preservation of old relics. Being thrown into contact with labourers, mechanics, and others, in the course of professional practice, I have frequent opportunities of judging on this head, and have lately seen in the class alluded to, instances of liberal feeling and evidences of enlightened views, which would have gained credit for men in higher stations."

Oxford Architectural Society.—A meeting of this society was held on the 11th instant, at their new room, Holywell-street, (late the Music-room), the president in the chair, surrounded by one of the largest attendance of members that has ever been known. The spacious and lofty room is well calculated for the purposes of the society, a large selection of casts of architectural details are chronologically arranged on either side of the room, and the walls facing the entrance are hung with specimens of ancient sepulchral brasses; in the centre of the room is a large cast of the beautiful alabaster tomb in Norbury church, which had been presented to the society by the Earl of Shrewsbury, some time back, but which, from want of space, they had been hitherto unable to exhibit. There is also an extensive library, a large collection of drawings and engravings, which have been arranged by the secretaries, so as to make them available for reference to the architectural student. Nine new members were admitted, and fourteen others announced for election at the next meeting of the society, fixed for Tuesday, the 24th of February. A report from the committee, congratulating the society on being settled in their new abode, was read by Wm. Trevor Parkins, S.C.L., of Merton College, honorary secretary; after which a paper was read by Mr Cox, of Trinity College, on "The Development of Anglican Ecclesiastical Architecture," which he intimated had reached perfection in the period of the decorated style.

A Model Lodging-House for the Poor in London.—Within the last six weeks a model lodging-house for the poor has been opened at No. 27, King-street, Drury-lane. The house has undergone a thorough repair, and is fitted up to accommodate forty single men or boys. Each will have a separate bed, and every means has been taken to ensure the health and comfort of the inmates. The terms are fourpence per night, which include the use of a common kitchen, well supplied with every article requisite to prepare a meal. There is a plentiful and constant supply of hot and cold water; a good fire is kept burning until eleven o'clock at night, and the gas is laid on. We speak from inspection, and are disposed to think that it will not only answer the benevolent object of the gentleman at whose expense the house has been fitted up, but will probably induce others to follow his example.

Plate Glass.—The reduction of the duty upon plate-glass has increased the demand for that material to so great an extent that many months must elapse before the existing orders can be executed. As an indication of the prosperous state of this branch of manufactures, it may be noted, that at a general meeting of the proprietors of the Thames Plate-glass Company, held last week at the Piazza Hotel, Covent-garden, it was determined to enlarge their works to nearly double their present size, and a dividend of 6 per cent. was declared.

RAILWAY TELL-TALE.—A Mr. W. Constable, of Brighton, has suggested the construction of an instrument to be attached to a railway carriage that shall describe on a chart a line, indicating the various speed of a journey. Such a *tell-tale* would act as a wholsome check on a reckless engine driver, and be the means of preventing some of those accidents which are so injurious in their anticipation, and so horrible in their results.

NAVIGATORS' STRIKE.—Several hundred labourers on the Lancaster and Carlisle Railway, near Kendal, have struck for an advance of wages; they demand 4s. per day and fortnightly payments.

COMPENSATION FOR RAILWAY INJURY.—Sir George Hayter, the artist, who received some bruises owing to the collision at Penshurst in July last, has had a compensation paid him by the South-Eastern directors, it is said, of 2,000*l.*

Messrs. Craven and Sons, the contractors for the Lincoln, Newark, and Nottingham Line, are making rapid progress. The bridge over the Old Witham, leading to the station, near the High-street, is shortly to be commenced.

The Croydon Atmospheric Line is now working daily for ordinary traffic. The London terminus is at the Dartmouth Arms. Trains go up and down once every hour.

MEETINGS OF SCIENTIFIC BODIES.

During the ensuing week.

MONDAY, Feb. 23.—British Architects, 16, Grosvenor-street, 8 P.M.; Geographical, 3, Waterloo-place 8½ P.M.

TUESDAY, 24.—Civil Engineers, 25, Great George-street, 8 P.M.

WEDNESDAY 25.—Geological, Somerset House, 8½ P.M.; Society of Arts, Adelphi, 8 P.M.

THURSDAY, 26.—Royal, Somerset House, 8½ P.M.; Antiquaries, Somerset House, 8 P.M.; R. S. Literature, 4, St. Martin's-place, 4 P.M.

FRIDAY, 27.—Royal Institution, Albemarle-street, 8½ P.M.; Philological (London Library), 12, St. James's-square, 8 P.M.

NOTICES OF CONTRACTS.

[We are compelled by the interference of the Stamp Office to omit the names of the parties to whom tenders, &c., are to be addressed. For the convenience of our readers, however, they are entered in a book, and may be seen on application at the office of "The Builder," 2, York-street, Covent-garden.]

For the erection of a public station at Halesworth, Suffolk.

For the erection of a wall on the south side of the union workhouse at Worksop, in length about 15 roods.

For supplying the commissioners for paving the town of Dover with 1000 yards of tooled York paving stone, 2,400 feet of curb, and 300 tons of Guernsey pitchers.

For the erection of a part of the river wall on the Liverpool Dock Estate, being about 300 feet in length, and 40 in height.

For repairing and upholding the hand-posts on several of the roads under the jurisdiction of the Metropolitan Roads Commission.

For supplying the Ipswich and Bury Railway Company with 50 coal waggons, 30 goods' waggons, 12 passengers' luggage vans, &c.

For the execution of three several contracts for the South Wales Railway Company, being a distance of about 14 miles, and comprising tunnels, earthwork, &c.

For supplying the commissioners of the great Dover-road district, Newington, with the best tooled York paving stone, granite pitching, granite curb, labour, mortar, &c.

For the execution of works on the Leeds, Dewsbury and Manchester Railway, being two contracts of the respective lengths of 2½ miles and 3½ miles.

For the execution of two portions of the Edinburgh and Northern Railway, being of the respective lengths of 3 miles and 5 miles.

For the execution of works on the Glasgow and Ayr Railway.

For the supply of 150,000 sleepers to the Midland, Nottingham and Lincoln, and Syston and Peterborough Railway companies.

For executing the foundations of a tower and small church in Kentish Rag Stone, for the Victoria-park Cemetary Company.

For executing the paviers, and masons' work of the south western district of St. Pancras parish.

For the erection of a house at Ryde, Isle of Wight, for the Royal Victoria Yatch Club.

COMPETITION.

The council of the Royal Agricultural College at Cirencester, offer a premium of 10*l.* for the design (with an estimate) of a farm-house and buildings of stone and blue slate, including all fittings. Outlay not to exceed 2,000*l.* Stone on the spot.

APPROACHING SALES OF WOOD, &c.

BY AUCTION.

At the Carew Arms Inn, Crowcombe, Somerset: 61 maiden oak and 24 maiden ash timber trees, of superior quality and large dimensions.

At the Bear and Ragged Staff, Cumner, near Oxford: upwards of 450 trees, principally elms, some of them large.

At Livermore-park, Suffolk: about 1,300 very superior oak, elm, ash, alder, beech, larch, Scotch spruce, and chesnut trees, and stands, &c.

At the Wortley Inn, Wortley, Yorkshire: 717 oak, ash, alder, birch, elm, asp, sycamore, chesnut, and willow timber trees, and nearly 7,000 oak, ash, birch, and alder poles.

At Little Bentley, Essex: 2,000 very capital larch, fir trees, 500 ash ditto, &c.

At the Red Lion Inn, Worksop: A large quantity of very valuable oak, larch, elm, and beech timber trees, now standing at Clumber and Worksop.

In the Brokers-yard, Brunswick-quay South, Liverpool: 642 logs Cuba mahogany, 30 logs Havana cedar, 1,518 lancewood spars, 16 logs Cuba hardwood, 78 planks Rio rosewood.

At 5, Crown-place, Crown-street, Soho: a large quantity of well-seasoned rosewood, mahogany, zebra, king and satinwood, maple, ebony, coromandel, box, lime-tree, sycamore, dry wainscot, cedar, birch, ash, walnut-tree, beech, brown oak, and pine, in logs, planks, boards and veneers.

At Halstead and Gosfield, Essex: 60 beech and chesnut trees, &c.

At Lowestoft, Suffolk: about 120 tons of superior Swedish bar iron, and 1,500 kegs of best Swedish steel.

TO CORRESPONDENTS.

"A. R. C."—*We do* not *believe that any person can "teach surveying, levelling, &c. in about a week."*

"X. X. X.—*If the agreement states you are to have "12l. per week clear of expenses," you can charge the latter also.*

"J. B." (Newbury.)—*We will look at the pamphlet.*

"H. A. W."—*The work mentioned contains plans and elevations of the buildings. The same publisher as "The Public Works."*

"Exchange, Blackburn."—*In answer to several inquiries respecting the proposed Exchange at Blackburn, Mr. Ellingthorpe, solicitor of that town, on being addressed will afford every information.*

"R. P. J." (Portsea).—*The work referred to is complete in* 150 *numbers.*

"T. S. R." (Limehouse.)—*A parapet to external wall is not indispensible. The projecting eaves must be incombustible.*

"F. B."—*Seyssel Asphalte has been sucessfully used for the purpose. Johns' cement would probably be effectual.*

"Fire-proof Buildings."—*To give W. H. I. particulars of the "best method for making an entire building fire-proof," would occupy more time than we can devote to it at this moment. We shall be happy to receive communications on the subject.*

"A Carpenter."—*The hinges may be galvanized after they are made.*

"W. D."—*The date shall be affixed. Proof shall be forwarded. Thanks for the solution, though it came too late.*

"Mr. Cockerell's Lecture."—*We are compelled to postpone the report of the concluding Lecture till next week, when it will appear at considerable length.*

"Subscriber" (Bucks).—*The mixed metal tubing for gas is softer than the tin tubing, and when suspended from a ceiling is liable to "bag." In other situations it seems satisfactory.*

"L. W. C.;" "R. Y.;" "Daniel O'Brien;" "C. Jenkins.;" "R. A. Prior," *have our best thanks.*

"J. R." (Stepney.)—*Outside blinds are permitted by a special modification of the Buildings Act.*

Received.—"C." (Cardiff); "T. A. H.;" "A. 45"; "G. Robins.;" "Budownik.;" "Decorative Art Society.;" "T. H. jun.;" "An Essay on an improved method of construction for viaducts, &c. by Messrs. Blair and Phillips.;" "The fallacies of Building Societies;" "Messrs. Manby's report on the Madrid and Valencia Railway."

*** Correspondents are requested to address all communications to the EDITOR, York-street.

ADVERTISEMENTS.

ROYAL ADELAIDE GALLERY, Lowther Arcade, West Strand.—During the week, the magnificent Tableaux Vivans of Professor Keller, after the works of the greatest Masters both Ancient and Modern, will be continued every Morning and Evening: The New Model of Nickel's Compressed Air Railway, and Pilbrow's Atmospheric Railway, will also be continually exhibited daily; an entirely new entertainment by Mr. J. Russell, entitled an Hour of Table-talk, enlivened with Songs and Anecdotes, will be given every Tuesday, Thursday, and Saturday, during the week; the Concert and Singing every evening, with various other Attractive and Instructive Exhibitions.—Admission One Shilling, Schools Half-price.

ROYAL POLYTECHNIC INSTITUTION.—Lectures on Chemistry, with brilliant experiments, by Dr. Ryan, daily, at half-past-three, and on the evenings of Mondays, Wednesdays, and Fridays at nine o'clock. A Lecture on the Atmospheric Railway, by Professor Bachhoffner, a working Model of which, carrying several persons, is exhibiting daily. The additions to the Opaque Microscope, Dissolving Views, and Chromatrope are very effective. The Physioscope. Submarine Experiments by means of the Diver and Diving Bell. Among the various additions to the Working Models is Coleman's new American Locomotive Engine, for ascending and descending Inclined Planes. A magnificent Collection of Tropical Fruits. Mr. Downe, the celebrated Flute-player, will take part in the Music, conducted by Dr. Wallis. Open from Eleven to half-past Five, and from Seven to half-past Ten in the Evening.—Admittance, One Shilling. Schools, Half-price.

CALIGRAPHIC BLACK LEAD PENCIL.
Manufactured by E. WOLFF and SON, 23, Church-street, Spitalfields, London.

THE CALIGRAPHIC PENCILS have been invented by E. WOLFF and SON, after the expenditure of much time and labour. They are the result of many experiments; and every effort that ingenuity and experience could suggest has been made to ensure the highest degree of excellence, and the profession may rely upon their being all that can be desired. They are perfectly free from grit; and for richness of tone, depth of colour, delicacy of tint, and evenness of texture, they are not to be equalled by the best Cumberland Lead that can be obtained at the present time, and are infinitely superior to every other description of pencil now in use.

The Caligraphic Pencils will also recommend themselves to all who use the Black Lead Pencil as an instrument of professional importance or recreation, by their being little more than half the price of other pencils—

H, HH, HHH, HB, B, BB, F, FF, W*	4s. per doz.
BBB, EHB	8s. ,,
BBBB	12s. ,,

* This pencil is particularly recommended for writing and counting-house use.

An Allowance on every Gross purchased by Artists or Teachers.

May be had of all Artists' Colourmen, Stationers, Booksellers, &c.

A single Pencil will be forwarded as a sample, upon the receipt of postage stamps to the amount.

CAUTION.—To prevent imposition a highly finished and embossed protection wrapper, difficult of imitation, is put round each dozen of Pencils. Each Pencil will be stamped on both sides, "Caligraphic Black Lead, E. Wolff and Son, London."

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WALLIS'S PATENT LIQUID WOOD KNOTTING.—This newly-discovered Liquid Composition which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them eating through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; a boy can use it as well and effectually as the best workmen: it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

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STEPHENS'S LIQUID OAK, MAHOGANY, ROSE, and SATIN WOOD STAINS, for Staining various sorts of Inferior Woods, so as to give them the appearance and character of the more costly and ornamental kinds; also for reviving the natural colour of Wood Carvings and Panellings, and other ornamental Wood Work, when such has become faded from age or other causes.

IN THE BUILDING AND DECORATING NEW CHURCHES, where it is desirable to give to the cheaper kind of Woods the appearance of Antique Oak, or to make Deal assume the character of Oak Panelling, whereby the effect of the more costly may be produced by the use of a cheaper material, these Stains will be found more effective than any means hitherto employed.

IN OLD MANSIONS AND HALLS, where the Wood Carvings and Panellings have faded, the application of these Stains will be found to revive and bring back the rich natural colour, and which colour may be varied from the lighter to the deeper shades of the most Antique Oak.

The BIRCH WOOD, which has a fine natural grain, with little colour, is particularly suited to the application of these Stains; and the appearance which it assumes after Staining is so near that of the natural wood, that is is only when the grain and colour of the latter is particularly fine that it is preferred. Beech, Birch, Elm, Ash, and other Woods, English and Foreign, receive the Stains and produce various imitations.

For the exposed Timbers of the inside of the ROOFS of CHURCHES, for which north country Timbers and Deals are generally used, by brushing them over with the Stain, which operation is very rapidly, and of course economically, effected, the appearance of an Oaken Roof will be produced. For colouring the backs of the Seats, Pews, the fronts of Galleries, the Pulpit, &c., it is equally advantageous.

Prepared by HENRY STEPHENS, and may be obtained at 54, Stamford-street; of Mrs. ROWLAND, Painter and Glazier, 3, Broad-street, Golden-square; at the Office of "THE BUILDER," 2, York-street, Covent-garden, and in Manchester, at Crake's Marble Works, Garratt-bridge, David-street, at which places specimens of their application may be seen.